

ARMED FORCES

ARMY • NAVY
AIR FORCE COAST GUARD
MARINES



MANAGEMENT



Feature

*A Major Air Command
With a Management
Mission*

*by General
Robert Burns*

Departments

- *What's New in Suggestions?*
- *Washington Management*
- *Conservation Thoughts*
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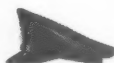
On The Cover

Major General Robert W. Burns, Commander, Air Proving Ground Command, began his Air Force career as an enlisted aviation cadet in 1928, has enjoyed an outstanding career in both Europe and Asia particularly with the 8th Air Force. Holder of a number of decorations, he became APGC Commander on July 1 at Eglin Air Force Base, Florida.

Vol. 1, No. 12 September, 1955

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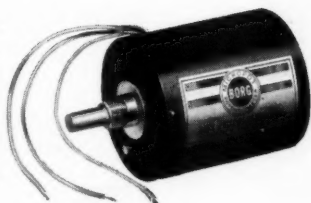
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Suppose the call is for paratroops. USAF's new C-130 Hercules, built by Lockheed, is the ideal paratroop transport. Look how the Hercules provides paratroop mobility:

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Up goes the ramp and, with turboprop power, the Hercules is airborne in seconds.

Flying faster than most commercial transports, and with great range, the Hercules gets where the paratroops are needed in a hurry. Inside, each paratrooper has his own seat, 2 feet wide. The cabin is pressurized and air conditioned, minimizing in-flight fatigue.

Two special side doors at the rear of the Hercules were designed for easier troop dropping. An effective wind-stream deflector and a unique floor extension make paratroop drops easier, faster and safer.

USAF's Hercules is now in production at Government Aircraft Plant No. 6 at Marietta, Ga., America's first turboprop production line for transports.

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ARMED FORCES MANAGEMENT

INTEREST in good management here at the Air Proving Ground Command is heightened by the fact that the Command itself resulted from the practical application of sound management principles. In addition, we are a command with a significant management mission. And, of course, we attempted to perform our mission in accordance with the proved and accepted precepts of good management. Consequently, APGC has three management stories to tell.

The first has to do with its establishment as a major command reporting directly to the Chief of Staff, USAF. Prior to World War II and as late as June 1948, the tactical evaluation of Air Force aircraft and equipment was performed by a number of different agencies and organizations. Each had its own ideas concerning testing methods and procedures. There was a decided difference in the resources available to these various organizations for performing operational tests. They were frequently in competition with one another for scientific personnel and qualified military leaders. More serious still was the fact that each was required to report to an intervening higher authority rather than directly to the Chief of Staff.

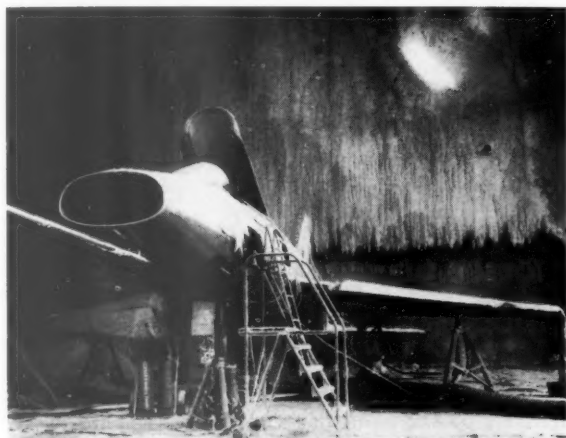
The Air Proving Ground Command at Eglin Air Force Base, Florida, was just one of these testing organizations. This is not the place for a detailed account of the evolution of APGC. It is sufficient to say



A MAJOR AIR COMMAND WITH A MANAGEMENT MISSION

by

MAJOR GENERAL ROBERT W. BURNS
COMMANDER, AIR PROVING GROUND COMMAND



THE AIR FORCE'S HOTTEST DAY FIGHTER IS FROZEN STIFF. Shown in the main chamber of the APGC's huge Climatic Hangar is an ice-crusted F-100 "Super Sabre." Tests of the aircraft's engine, guns, controls and components parts were conducted in the Climatic Hangar at temperatures ranging from normal to minus 65 degrees Fahrenheit over a period of two months. Concurrently other models of the F-100 were undergoing rigorous flight tests during the accelerated operational suitability test program conducted at Eglin Air Force Base.

that on 1 June 1948, the command was relieved from assignment to the Air Materiel Command with headquarters at Wright-Patterson Air Force Base, Dayton, Ohio, and designated a major air command. With this designation came the sole responsibility for conducting operational suitability tests of all Air Force aircraft and equipment. APGC could conduct these tests objectively with complete assurance that the results would go directly to the Chief of Staff as interpreted by the people who actually made the evaluation. The command could, in other words, call them exactly as it saw them.

All operational test activities being centralized within one organization, the Air Proving Ground Command could now establish sound, standardized test criteria and could be reasonably assured of getting the facilities and personnel needed to perform its primary and exclusive mission. Here, centralization of similar activities, always a sound management principle, eliminated duplication, saved money and man-hours and not only improved the effectiveness of the testing mission but increased the validity and objectivity of results.

APGC's second management story is to be expected for it has to do with every commander's responsibility for promoting good management practices *within* his organization. Like other commands throughout the Air Force, our internal management improvement pro-

(Continued on page 34)



By
Geo. Garvin Brown
President
Brown-Forman Distillers Corp.

A LIGHT toss would carry a stone from the window of my office into the premises of the main plant of the organization about which this article is being written. All of the other officers of our company also put in their working hours within sight and sound of the operations to which our company is devoted. Most of them, like me, have spent at least sometime behind those walls learning our industry by actually helping to manufacture its products. Despite a continuous growth by our company, the rate of growth has been accelerating rather than slowing down in recent years. Most of us still know by name a large percentage of the people who work in the plants and warehouses which our offices adjoin.

In the working background of any executive group in the industry is a similar experience that has gone deeply into its own industry. Most of us who compose management in Brown-Forman are relatively young men, who began working in the company when all of its personnel could be comfortably fitted in one fairly small room. Probably these are some of the reasons why we find it somewhat hard to discuss management and management policy in abstract terms without reference to the people and their attitudes, temperaments and abilities that turn in-

dustry from an agglomeration of buildings and equipment into a living, working force.

I shall not attempt to force a comparison between our own kind of organization and a military establishment. But there are some interesting analogies. For example, our company can be compared to a military force in the fact that it is a group of men and women united by a common interest and objective. Within this group, as in the military establishment, leadership has the responsibility of maintaining and promoting esprit de

corps and efficiency of operation. Our daily round is part of a continuing campaign, in which the day to day competitive action is shaped by the strategy and tactics in which all of us are involved.

But there are many sharp differences between the frame of activity in which we work and that within which a military organization operates. For us, one of the prime facts of life is that our company is a profit-making establishment with a responsibility to its stockholders for profitable management. All of our employees are directly affected by the company's earning power or lack of it and they and we are therefore guided by a direct interest in promoting a profitable industry. Our organization rests on strong supports, in our opinion, but those supports do not include military discipline in the strict sense. We place much reliance on the voluntary cooperation of personnel at all levels. We seek to build such cooperation by maintenance of sound employee relations. In our view, it is important that each individual on our company's payroll have a feeling of identity with the company. By consciously working toward this ideal, we feel that we can depend with safety on the personal and company pride of the typical employee for proper performance and conduct.

Much of what we are today is an outgrowth of our history as an old line Kentucky distillery. Brown-Forman Distillers Corporation was founded in 1870 by my grandfather,

George Garvin Brown. Our first product, Old Forester bottled-in-bond bourbon, still today one of the leading bonded whiskies, was the first American whisky to be sold by the bottle only. This policy, incidentally, still prevails.

Our annual sales, on a rapid ascent for some years, now total about 75 million dollars. By this, as well as the other customary corporate measures, our company now ranks as the largest independent in the distilling industry. As have the other components of our organization, our working force has

and still continues to increase, and now totals about 1300 full time employees. Our production facilities are concentrated in Kentucky where we own and operate three distilleries, as well as one of the leading cooperage producers in the country, the Blue Grass Cooperage Company. Some years ago, Brown-Forman undertook a diversification program and established Brown-Forman Industries as a subsidiary engaged in the production and distribution of products unrelated to distilled beverages. This organization is now occupied principally in the manufacture of photographic chemicals, which are making the Brown-Forman name one of increasing significance in the important field of photography.

Four generations of family ownership and operation—members of the fourth are now punching time clocks in our main plant—have helped the outlook and tradition of the company's founder to endure. But our policies through the years still reflect the approach to business which my grandfather brought with him to the distillery he established in 1870 as a youngster. He was intent on building a business that would last. The compelling concern for quality, which he brought with him from the pharmaceutical field, he translated into the determination to produce whisky that would attain a uniform standard of proof and quality comparable to the standards imposed by the medical profession. This was, for the time, a startling de-

Brown-Forman's Committee Management

parture, as was his decision to sell Old Forester by the sealed bottle only in order to assure such standards. That insistence on quality was part of an outlook in which permanent and long-term gains were all-important.

Brown-Forman grew and thrived under these policies and the direction of George Garvin Brown and my father, Owsley Brown. As a producer of premium products, however, the company did not aspire to what passed for volume operation prior to World War I. Brown-Forman was one of a few distilleries allowed to continue in operation under government license through the Prohibition period. It came into Repeal as a small company and for some time its total working staff numbered less than fifty persons. Our growth since Repeal has taken us out of the small company classification, but we still hold to what we consider to be small company strengths and virtues. Multiplication of responsibilities for our top management, as well as a steady increase in our working force, no longer make it possible for me and other members of the management to know every single employee—as we did until not so many years ago. But we still have a personal acquaintance with a large number of them. In this advantage we are admittedly aided by the high ratio of long-term employees. Despite our growth, most departments remain small enough to enjoy close and informal association between department heads and their co-workers. All of these facts have encouraged teamwork and discouraged one-man masterminding.

There persists throughout our organization a pleasant working atmosphere and a predominately informal relationship, a heritage in part from the days when our company was small and the schedule of operation more leisurely. We also maintain one of the most comprehensive employee benefit arrangements in our industry. In addition, our company adheres to the policy, whenever possible, of promoting from within. Whatever the effect, singly or collectively, of these conditions, our company does enjoy an extremely low employee turn-over.

I have described these elements in Brown-Forman's make-up at some length because they have a definite bearing on one of the cardinal principles of its management. They have brought about a kind of company character and environment congenial to the development of a group as contrasted to the one-man approach to management. This has crystallized into a committee form of management. Committees are not merely a part of our management structure; they are in a sense its keystone. Decision by committee underlies company activity fully. This is so not merely because committees are an integral part of our company plan of organization or are vested with responsibility for prime policy decisions. It reflects the fact that the committee way of doing things has worked so well in our company that no one would change it if he could. Our company's happy affinity for teamwork is one reason why it has worked so well. Another very important reason is the fact that no member of a committee has more than one vote, whatever his position in the company.

The formation of company policy as well as major decisions involving policy is entrusted to a few top-level committees. Under the Executive Committee, top policy-making body of the company, function the other committees. Among them they cover all areas of company activity. These committees are Finance, Marketing, Production, and Public, Trade and Employee Relations. All of these committees, as well as the Executive Committee, report only to the company's Board of Directors. They are neither responsible nor subordinate to any single officer of the company. Practically every officer of the company is a member of one or more of these committees, which also include non-officer members. Each committee, of course, includes those officers whose responsibilities are related to the general area in which the committee functions.

As our company's size and complexity has increased, the members of our executive family have undertaken to balance the advantages and disadvantages of the committee way of getting things done. Most of this comes at the end of

what we not-so-facetiously call "Hell Week," the monthly period when home office and field executives join together for the deliberations of our Marketing Committee by which sales, advertising and merchandising plans are determined. During the "Hell Week" period, also occur individual conferences with field personnel on the various problems which had developed since the last meeting. But the balance has consistently tilted in favor of committee activity, and has become even more marked with the passage of time.

Hard experience over a considerable time has proved that the combination of experience, ability and insight which a committee represents is likely to yield a sound, well-founded judgment. One important reason for this, of course, is the fact that whatever the determination, it must satisfy several minds, trained to consider different aspects of company interest.

Their work in the various committees in which they hold membership has helped to develop a broad company viewpoint among

(Continued on page 42)

"Vertical" Test Cell Aids Ryan Jet VTO Flight Research

Newest research tool at Ryan Aeronautical Company is this dual-purpose test cell which is the nation's first facility to be designed and built for testing jet engines and afterburners in vertical position. Unique in concept, the new cell can handle turbojets in both horizontal and vertical attitudes, as they will operate in vertical take-off airplanes like the jet-powered VTO aircraft that Ryan is developing under contract for the U. S. Air Force.

The \$175,000 research facility has been designed for testing extremely high-rated jet engines and afterburners of present and future configuration.

In addition to the new test cell's use as a "proving ground" for jet VTO, it also has important applications to metallurgical research in connection with Ryan development of high-temperature components of all types of power plants for aircraft and missiles.

Job Engineering—Design and Re-Design of Jobs for Better Manpower Utilization



By Dr. George H. Hieronymus

PART II

Synopsis of Part I: Part I of this article, published in the August issue, presented a research project conducted by the author in cooperation with the Department of the Army and American University of Washington, D. C. The purpose of the project was to investigate the advantages of and methods employed in changing jobs from the conventional patterns used when there is no shortage of manpower or skills involved. Such changes of job patterns permit use of less skilled and experienced manpower that is available when labor is in short supply. The procedure and methods of the research were described and findings were summarized. The findings are capsuled as follows: Jobs have been and are designed or redesigned along new patterns when it is profitable to do so in order to improve manpower utilization. Management literature contained ample evidence that such job modification is fairly common practice, and there are many references to the practice; but nothing existed in the nature of procedure, methods and system for making the job changes in the best way. No standards had been devised to help assure the best job designs. The nomenclature referring to the practice was varied and uncertain. "Job Engineering" was the term chosen

This article describes a study conducted by the author in cooperation with American University of Washington, D.C., and the Department of the Army, and sets forth the findings of the study in terms of system and procedural steps for conducting job engineering.

Conclusion of article begun in the August issue

as the one most descriptive of the practice. By the study of actual job-engineering cases, a set of basic guides to job engineering and step-by-step procedure were delineated. The guides were as follows: Comprehensive analysis of available labor and skills is essential. All skills and experience available both inside the organization and in the outside labor market should be identified and considered for utilization. Greatest gains are secured by designing the jobs so as to permit shortest, most specific training and requiring narrow range of skills. Change from manual to machine operations, particularly to automatic and semi-automatic machines, promises great manpower savings. Better results seem to come from engineering repetitive jobs than from developmental and other non-standard types of jobs. Best results are obtained when democratic, team effort determines job designs rather than when "experts" make the decisions without participation of all concerned. As far as possible, jobs should be designed so that the highest skills of each worker are used. Fair pay for actual work done should determine the rate rather than "bonus rates" because of skill shortages. New job patterns usually require changes in related supervisory and administrative practices.

Procedural steps to be followed in job engineering projects were determined to be as follows:

1. Study jobs as they exist to get general pattern for each.
2. Chart the work processes and work flow.
3. Group all operations by types

into natural, major divisions.

4. Identify repetitive operations and tasks.
5. Classify and group the operations, duties, and tasks by types and levels of skill required.
6. Tentatively arrange these skill groupings best to meet skill types and levels of available workers.
7. Try out the set-up, and improve with job training as needed.
8. Observe, modify, and firm-up the new job designs.

Two case histories of job engineering projects were reported—one in the administrative and clerical field, and one in scientific research and development. The latter case resulted in a saving of \$165,000 during the first year of operation.

[Editor's Note: It is believed that job engineering, the work term used by the Department of the Army in referring to job design or redesign for manpower utilization purposes, offers an additional development in the growing field of management techniques. As I see it, job engineering provides system and procedure for relating well-known industrial or management engineering techniques more closely to manpower utilization. After 15 years of continuous manpower shortage in many skill categories, it seems abundantly clear that this must be done. For these reasons, the second part of this article is published so that the readers may have the benefit of additional case reports of job engineering projects.]

Frankford Arsenal, Philadelphia, Pa., Optical Elements Shop, July-December 1950.

Problem: The Optical Elements Production Shops manufacture lenses, prisms, and reticles for a variety of precision, fire-control instruments such as binoculars, range finders, and various kinds of intri-

cate sights. In the fall of 1950, it became necessary to increase production many-fold. The civilian complement of the Shops had to be increased by about 500 percent. Practically no skilled optical workers were available in the Philadelphia area.

Facts Bearing on the Problem: The post-war employment level of the Shops varied from 12 to 50 skilled and semi-skilled employees, which was the strength when Mutual Defense Assistance Program for Europe and United Nations requirements in Korea called for the expansion. The personnel office, in anticipation of needs, had been collecting information on availability of skills in the area. Spot checks showed that few former employees in the Shops would be available to return. Production requirements indicated need for 300 additional employees at varying skill levels. The Shop was directed to expand by this number and the personnel office was instructed to recruit and hire immediately as requisitions were received from the Shops.

Analysis: Data on local labor market conditions were submitted to the General Foreman of the Shops by the personnel office. Re-examination of wage scales indicated that pay was in line with locality practices; there was no basis for raising wages. Consideration was given to importation of skilled workers from other optical centers. Difficulties of housing, lack of wage differentials, and decision that skilled optical workers were needed in other centers by private industry on government contracts ruled out importation as a solution.

Since the Shops had experienced wholesale sub-division of work into simple parts during World War II, and had then used its skilled workers mainly as supervisors, this again seemed to offer the best solution. Many of the skilled employees currently working as Optical Workers-General were qualified technically to supervise special-skill processes such as blocking, grinding, polishing, centering, etching, coating, and inspecting.

The analysis then was turned to a review of how jobs were subdivided in the Shops during the war, for the purpose of planning

and rationalizing the process if this were to be the solution. The review disclosed that "skilled hand operations" could be broken down into easily learned occupations with a gain in production and no loss of quality; that breaking down the jobs also often pointed the way to mechanization; that the most apt learners in optical work had been telephone operators and waitresses; and women over 25 years old advanced more rapidly than younger women. Other data indicated that best job patterns could be designed only after careful job analysis; that serious analysis, planning, and coordination of many elements of supervision and management must be brought to bear in arriving at job patterns that fit production needs and permit utilization of available manpower, with minimum training cost.

The decision was made to proceed on re-design of the jobs in the shop, taking these experience patterns into account and proceeding as systematically as possible.

Action: Recruiting was begun at the Grade 5 level. Data collected during the analysis phase were extended by additional follow-ups on persons formerly employed. Mail and telephone contacts identified former employees who would return. These and those who were not interested in re-employment gave clues to other prospects. The Grade 5 trainee job used during the war was improved so that the skilled non-supervisory technicians at Grades 12 and 15 could have helpers to handle *all the work at the lowest skill level*. It was not intended that these helpers would learn and advance to higher skill levels faster than they would be needed. In addition to the Grade 5 job, a Grade 8 job was designed to be filled as qualified recruits could be found.

These Grade 5 and 8 jobs were designed specifically in seven different skill categories: Grinding, production polishing, experimental (precision) polishing, centering, (Continued on page 31)



Discussing the management of vehicle maintenance of his 1926 Model T Ford to S/Sgt. Jack Crane, operations specialist, at left, is Lt. Col. Tyron Tisdale, Commanding Officer, 1st Bn., 28th Inf. Regt., 8th Infantry Division, Fort Carson, Colorado. (U.S. Army Photo) Colonel Tisdale who has owned his Model T for over a year, has demonstrated his ability as a combat infantryman. Last year he drove this distinctive looking sportster from Fort Benning, Georgia to Fort Carson, Colorado. All of this was accomplished in a five-day period during which time the sturdy little pile of junk drew amused, annoyed and amazed stares from passing motorists. The colonel has found during the past year in commuting daily between Colorado Springs and Fort Carson, that preventive maintenance is the only answer to continued operation, and that this, he must do himself. With a full load, which includes Kathrine (wife) Tyron, Jr. (son) Ginger (pooch) Binky (parakeet), he can make 35-40 miles per hour, downhill on a warm day with a good tailwind.



McCabe's article discusses 3 things: Grant's growth as a military leader; the scientific development of leaders; and the elusive "Will to Win!"

(The opinions herein expressed are not necessarily those of the Dept. of the Air Force)

Moreover, the Quartermaster Corps was an excellent place for him to begin his training in tactics, which is the science of winning battles, and in strategy, which is the science of winning wars, because every top executive should know a lot about material procurement and distribution (the soldier calls it logistics), especially in the case of a 19th Century general who, not having refrigeration, had to shoo along his next week's meat ration on the plodding hoof.

Grant's career as a developing executive demonstrates four basic principles of executive development. First, executives are developed by experience. As for classroom instruction, note that West Point, after 150 years of trying, still can graduate only second lieutenants, not generals.

The textbook on how to be an executive has not been written; the subject is a monopoly of that most expensive and most thorough of educational institutions, the University of Experience. Second, diversity of experience is the thing; engineers, accountants, salesmen and industrial relations men need to know something about each other's

"BOYS, WE'RE GOING BACK!"

By Douglas McCabe
Lieut. Colonel, Air Force Reserve

How great men and their great leaders differ from the rest of us—a review of military and business leadership and the techniques of developing executives, with a tribute to the men in the ranks.

Second part of three part article

Begun in August

phase of the business, particularly at the higher levels of responsibility.

Such diversity of experience is also necessary in the military service, where amphibious operations frequently are carried on by combined elements of land, sea and air power. Third, by the time a man is given an executive position it is usually too late to develop him for it—the competition won't sign a truce so you can take time out for the purpose. And fourth, he must have the developed, not merely the potential, ability to stand alone and think creatively while under fire; it doesn't require an executive to carry on routinely what someone else has initiated.

Did Grant think creatively? And how! It was he who first violated, at Vicksburg in 1863, the sacred "standard procedure" that an army must not fight beyond reach of its supply lines. Was it a narrowly trained tactical "specialist" who did that at Vicksburg? Certainly not. It was a well rounded, versatile "general manager" molded by varied experience, with an injection of quartermaster blood in his veins and memories of supply depots and material control records whirling in his highly co-ordinated mind.

I'd like to spotlight two special points of interest in this phase of Grant's rise: first, if he had not had "guts," he never would have violated that standard procedure; and second, it was his almost unbelievable but well deserved victory at Vicksburg—incidentally at the very moment when Meade was fumbling the ball at Gettysburg because he

had more caution than "guts"—and not so-called "political pull" which brought Grant to the attention of Lincoln.

Versatility was the word for Grant—versatility based on detailed knowledge added to wide experience multiplied by creative thinking compounded with "guts."

"Guts," translated into military diction, is known as the *will to win*. There have been other such executives. One was John Paul Jones in our War for Independence. His ship, the famous Bon Homme Richard, was punctured, burning, sinking. "Do I understand that you have surrendered?" his opponent confidently shouted. "I have not yet begun to fight!" was Jones' silly reply. What could any executive in such a hopeless situation possibly do except surrender? Standard procedure.

But apparently the Navy had neglected to provide Jones with a copy of the procedure because he proceeded to pull the two vessels together with grappling irons, boarded the other one, locked his opponent in the astonished fellow's own cabin and, pausing only to salute the Bon Homme Richard as it sank, sailed into history.

The Studebaker outfit must have been headed by such a man at the turn of the century because, among all the once great wagon companies, the name of Studebaker alone, contrary to standard procedure, survives to grace the radiator grille of a motor car. I am inclined to suspect that one of the qualities in the elusive definition of an executive is a profound contempt for standard procedure.

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Referring again for a moment to what is perhaps the greatest, even though it was indecisive, battle on this side of the Atlantic, Gettysburg, let us reflect on the outstanding nobility of character of its commander dressed in gray. He is a superb exemplar of the motto, "Duty—Honor—Country," of that college of which he is one of the foremost graduates, the United States Military Academy. While high honor, self-sacrificing devotion to duty and unimpeachable character do not by themselves qualify a man as an executive, it is certain that no man can attain the summit of executive achievement without them. It was this man's possession of these sterling qualities which placed him upon the lofty pedestal of immortality, rendering him as great in defeat as he would have been in victory, a defeat due, in the last analysis, not to tactics or strategy but to logistics, that is, to the superior economic strength of the North. And so it was that, when meeting with him to accept his formal surrender, Grant was devoid of any sense of elation, for this was the man to whom the secret telegraph code of the Northern armies referred by the dignified, symbolic title of "The Husband"—Robert Edward Lee.

Well, to get back to Grant, on and up he went, drinking in huge, thirsty gulps of *experience* until one day in the bloody Wilderness in Virginia in 1864 he was slugged to a staggering standstill by Lee, as every other Northern general meeting up with Lee had been slugged to a staggering standstill and as Grant himself was again and again in the future to be slugged by him.

All those executives, in that set of conditions, had forthwith retreated to lick their wounds. Standard procedure, you know. What, Grant retreat? Why, that insatiable glutton for experience was by now as tough and durable as the hides he used to tan in his father's shop at Galena, Illinois. His instant, almost reflex reaction to the stunning blow he had just received can best be described in terms of the thrilling story of a fork in a road which became, on military maps, the turning point of the war.

We are told that on that night the Northern army was set in motion.

There was a fork in the road which it was traversing. One branch turned north to safety, the accustomed highway of Lincoln's gutless generals. The other curved deeper into the dreaded Wilderness, to agony and death. At the fork an unkempt but well known figure sat upon his horse, calmly smoking a cigar. As each column of troops approached, the figure pointed silently but meaningfully into the Wilderness. And on that same memorable night the boys in blue, singing for the first time, we are told, while on the march, and the boys in gray steadfastly awaiting the oncoming avalanche, knew that the star of the Confederacy was at long last waning. And indeed it was, for the Northern armies were finally under the management of a man with talent for leadership, "guts" and experience—in short, *an executive*.

SCIENTIFIC DEVELOPMENT OF LEADERS

Now, let's talk about the techniques of executive development for a few minutes. An executive development program should be carefully planned. Of all top management executives, Lincoln probably could best plead the necessity for careful planning. Had he been able by some systematic means quickly to find and develop Grant, the war's mid-point at Gettysburg in 1863 might have been its armistice day. But, actually, Lincoln did not need psychological and aptitude tests, thematic apperception and an I. Q. report to find Grant. There were a few Confederate officers who hoped at the very beginning of the war that Lincoln would never discover that 39-year-old ex-Captain Grant, a partially alcoholic, insignificant, half-alive tanner of hides, with whom they had served in the Mexican War 13 years earlier, was the man to put one's chips on.

Neither did Lincoln apply sensibly planned executive development to Grant after he found him, if only because there was not time. Fortunately for them both, Grant had opportunities for picking up big chunks of experience every minute of his brief career, a process of self-development not available to all men. By the way, the Army now has a program for me-

thodically developing its "Grants" and that program is based on the fundamental principle of executive development, *planned experience*. You can read all about it in the Army's Technical Manual No. 20-605 entitled "Career Management for Officers."

Experience is the trick, both in military service and in business. First, pick men with a promising *talent for leadership*. Search for them by every available means, including psychological tests; if you use such tests, however, get a specialist to devise and interpret them for you, tailor-making them for the particular requirements of your organization. And then dunk, drench and drown the selectees in the deep, raging ocean of experience. Those who demonstrate that they have not only a talent for leadership but also "guts" will, after sufficient experience, qualify as executives. There is the formula for executive success: talent for leadership—"guts"—experience.

What, then, of lectures, seminars, multiple-management committees and all the other so-called "sec-
(Continued on page 38)



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ARMED FORCES MANAGEMENT ASSOCIATION

NEWS and ACTIVITIES

In Europe in the past few months German moppets have watched with interest the construction of a new housing development for military personnel. In the Pacific, Hawaiians have assisted in preparations to take care of an incoming Division. In the United States, American soldiers and civilians have made preparations to ship a division to Europe and to accommodate the return of a similar unit to the United States. Throughout the world the Army was engaged in carrying on many diversified activities. One might ask, "How do the widely dispersed commanders know what they are supposed to do and when they are supposed to do it?"

The following is an attempt to show how the Army tells its people what to do and how it matches the assignment of tasks with the necessary wherewithal in men, money, materiel and facilities, and finally how an appraisal is made as to how well the work assigned is actually being done.

The Army is in the process of doing all of these things through a relatively new technique known as the Army Program System. This system provides for a method of administering the activities of the Army to include the organized direction and control of the non-tactical operations of the Army, and for the attainment of the required mobilization base, forces and facilities.

The "method of administering the activities of the Army" is through the use of programs relating to the several functional areas of the Army's activities. These programs are expressions of the objectives, policies, and resource requirements of a particular functional area for a designated span of time and are contained in program documents. The acts involved in programming or implementing the pro-

by Major General L. R. Dewey
Assistant Comptroller of the Army

gram system are identified by three closely inter-related elements: program development, program execution, and program review and analysis. Program development is planning "what to do" and involves three steps: (1) A determination of Army objectives, (2) a breakdown of these objectives into program objectives, and (3) publication of a program document. Program execution embraces the steps taken to get the job done. It involves the assignment of the tasks to an operating agency, such as a Continental Army, an overseas command, or a Technical Service and the scheduling of the details of the execution by the operating agency. Program review and analysis has to do with checking up on the results and involves a determination of whether the tasks have been performed as scheduled, an appraisal of the economy and efficiency in which the tasks were performed, and lastly an evaluation to see if the accomplishment of these particular

tasks are in harmony with the other tasks that the Army is performing. Review and analysis also provides the basis for initiating corrective action, if necessary.

In keeping with the accepted management practice of grouping related activities into functional segments that can be handled easily, the program system provides

The Army Program System

for the division of work that the Army does into groupings known at the Department of the Army level, as the Primary Programs. This grouping provides a means whereby related activities, as a group, can be administered and for which specific objectives can be set. With the exception of certain functions—principally those of a civil nature, all of the activities of the Army have been grouped into 16 programs, as indicated in the following chart.

ARMY PRIMARY PROGRAMS		
Program	CONTROLLING	Responsibility
1. Troop		G-1
2. Materiel		Dep Log
3. Installations		Dep Log
DERIVATIVE		
4. Command and Management		G-1
5. Manpower		G-1
Military Personnel		G-1
Civilian Personnel		G-1
Manpower Control		G-1
6. Training		G-3
7. Industrial Mobilization		Dep Log
8. Procurement		Dep Log
9. Supply Distribution and Maintenance		Dep Log
10. Services	G-1, Dep Log, Compt	
Administrative and Protective		G-1
Welfare and Morale		G-1
Logistic		Dep Log
Finance and Audit		Compt
11. Construction		Dep Log
12. National Guard		CH, NGB
13. Army Reserve and ROTC		CH, RROTC
SPECIAL PURPOSE		
14. Intelligence		G-2
15. Research and Development		CH, R&D
16. Joint Projects		Assigned by Project



The newly elected officers of the New York Chapter of the Armed Forces Management Association are shown during a conference at the Brooklyn Army Base. Left to right, they are: Miss Martha V. Sameth, Treasurer, of the Civilian Personnel Division, BAB; Mr. Joe Frein, Vice President, of the N.Y. Quartermaster Market Center; Mr. Theodore Demsky, President, formerly of the Management Engineering Division at BAB and now with Headquarters First Army; and Mr. Stanley Baldinger, Secretary, of the Management Engineering Division, BAB.

We welcome Major General Lawrence Russell Dewey as a new member, and as Vice President of the Association. Graduating from the US Military Academy in 1924, General Dewey began his colorful military career in the dashing Cavalry. His Cavalry assignments led him to Fort Ethan Allen, Vermont; Fort Riley, Kansas; Fort Bliss, Texas; and Fort Stotsenburg, Philippine Islands; with time out for the Cavalry School and the Signal School. In 1939 he wound up his Cavalry assignments with the 3d Cavalry at the coveted Fort Myer, Virginia.

With the progress of the Army to mechanized units General Dewey joined the 82nd Reconnaissance Battalion of the Second Armored Division at Fort Benning, Georgia in 1940, and later travelled with the Division as Operations Officer to North Africa. In 1943 he transferred to the First Armored Division and served in North Africa, in the Mediterranean, and in Europe, as Chief of Staff and Commander of Combat Commands "A" and "B"; later serving as Operations Officer of the US Constabulary in the European Theater.

In 1946 General Dewey entered the National War College and on graduation in 1947, remained as instructor at the College until October 1950, when he was assigned to the Office of the Secretary of Defense for duty with the North Atlantic Treaty Organization.

In 1951 after a short tour of duty as Commander of Combat Command "A" of the First Armored Division at Fort Hood, Texas, he was transferred to



the Far East Command as Chief of Staff of the IX Corps.

He came to the Office of the Army Comptroller as Chief of the Management Division in 1953 and on 1 March 1955 he became Assistant Comptroller of the Army.

General Dewey's decorations and awards are commensurate with his brilliant career and service. They include the Distinguished Service Medal, the Silver Star with Oak Leaf Cluster; the Legion of Merit with two Oak Leaf Clusters; the Bronze Star Medal; the Purple Heart; and the Army Commendation Ribbon.

We are proud to have him as a leading member of our Association. General Dewey has chosen the subject "The Army's Program System" for his introductory article.

Programs at the Department of the Army level are called Primary Programs to avoid confusion with the programs of subordinate elements of the Army, which will be mentioned later. You will note in the right hand column of the chart the designation of the program director responsible for each of the primary Programs. This responsibility embraces the full gamut of programming: development, execution, and review and analysis. In addition to the indicated Primary Program Directors, Technical Services have responsibility for the development, execution and review and analysis of those activities for which they have normal staff responsibility. One might ask, "What is the difference between the functions of a staff agency in its staff capacity and that as a program director?" The answer is simple; there is no difference.

As will be noted on the chart,

the Primary Programs of the Department of the Army are divided into three categories: Controlling, Derivative, and Special Purpose. The Controlling Programs are really the key or governing programs and are in fact the blueprint for the operation of the Army. They are developed first and cover a period of five years. Derivative Programs stem directly from the Controlling Programs and generally cover a period of only one year. Thus the Derivative Program of Training is directly dependent for its workload upon the objectives set forth under the Troop Program. The third category of programs is called Special Purpose. Their titles are indicative of their special nature. It is apparent that they have a very direct relation to the programs in the two other categories—the program of Research and Development, for example, relating to Materiel Procurement Programs.

At this point it is considered desirable to show the relationship that exists between the programs at the Department of the Army level with the programs of a Command. A Command refers to CONARC, the Continental Armies, overseas commands, and the Technical and Administrative Services. It is quite appropriate, therefore, to identify the programs of the Commands as Command Programs. The chart on the following page, with its dashed and dotted lines, indicates this relationship at one Command headquarters.

It will be noted that the Primary Program of Command and Management in this instance is broken down by the major command into Command Programs of Planning, Management, Public Information, Inspections-Investigations-Complaints, Military History, and Safety. This is an example of the flexibility authorized the major commander in that he may fractionalize the Primary Programs for his own convenience as long as he conforms to the major activities of the Primary Programs.



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NATION'S DEFENSE SYSTEM

RELATABILITY OF DEPARTMENT OF THE ARMY AND COMMAND PROGRAMS

PRIMARY PROGRAMS	COMMAND PROGRAMS
1. TROOP	1. TROOP
2. MATERIEL	2. NOT APPLICABLE
3. INSTALLATIONS	3. INSTALLATIONS
4. COMMAND AND MANAGEMENT	4A. PLANNING
	4B. MANAGEMENT
	4C. PUBLIC INFORMATION
	4D. INSP. INVEST. & COMPLAINTS
	* 4E. MILITARY HISTORY
5. MANPOWER	4F. SAFETY
VOL I MILITARY PERSONNEL	5. MANPOWER
VOL II CIVILIAN PERSONNEL	VOL I MILITARY PERSONNEL
VOL III MANPOWER CONTROL	VOL II CIVILIAN PERSONNEL
6. TRAINING	VOL III MANPOWER CONTROL
7. INDUSTRIAL MOBILIZATION	6. TRAINING
8. PROCUREMENT	* 7. INDUSTRIAL MOBILIZATION
9. SUPPLY DISTRIBUTION & MAINTENANCE	* 8. PROCUREMENT
10. SERVICES	9. SUPPLY DISTRI. & MAINT.
VOL I ADMINISTRATIVE & PROTECTIVE	10A. ADMINISTRATIVE SERVICES
VOL II WELFARE AND MORALE	10B. PROTECTIVE SERVICES
VOL III LOGISTIC	10C. WELFARE & MORALE SERVICES
VOL IV FINANCE AND AUDIT	10D. TROOP INFOR. & EDUC.
11. CONSTRUCTION	10E. LOGISTIC SERVICES
12. NATIONAL GUARD	10F. FINANCE & AUDIT SERVICES
13. ARMY RESERVE AND ROTC	** 10G. LEGAL SERVICES
14. INTELLIGENCE	11. CONSTRUCTION (APPROV PROJ)
15. RESEARCH AND DEVELOPMENT	12. NATIONAL GUARD
16. JOINT PROJECTS	13. ARMY RESERVE AND ROTC
	14. INTELLIGENCE
	15. NOT APPLICABLE
	16. JOINT PROJECTS

— GENERALLY APPLICABLE
 - - - PARTIALLY APPLICABLE

* THESE PROGRAMS ARE APPLICABLE TO THOSE COMMANDS WHICH HAVE AN OPERATING RESPONSIBILITY FOR THE FUNCTIONS COVERED.
 ** APPLICABLE IN COMMANDS BUT NOT COVERED IN DEPARTMENT OF THE ARMY PROGRAMS.

It might be well to note in passing that the organization for programming at the installation level, at military posts, arsenals, depots, etc., is generally the same as at the major command level except that it may not be as formal as in the higher headquarters.

With this background, let us look into the operation of the program system, beginning at the Department of the Army. The first action has to do with program development, planning what to do. The first step in program development is the preparation of an estimate of what the Army needs to do to carry out its missions and what it can reasonably expect to receive in the way of resources. Weighing what needs to be done against what there will be to work with results in the establishment of Army objectives. A program directive is then issued

from the Office of the Deputy Chief of Staff for Plans and Research. This directive gives assumptions, states the Army objectives, and provides the necessary guidance for the program directors to prepare their program documents. Based upon the guidance in the program directive, the program directors initiate the preparation of the Primary Program documents which set forth the specific objectives to be attained in each functional area. For example, the Army plan may establish a requirement for an increase in forces to implement that plan. This Army objective might be reflected in the program directive as "Increase the Troop Strength by one Airborne Division by the end of the fiscal year." The Troop Program would reflect the location and time-phasing of the activation of this division; Installations Program

would reflect the facilities required for the division, and the Materiel Program would reflect its materiel requirements. Based upon these broad objectives, the derivative programs would then spell the specific things to be done. The Manpower, Training and Services Programs would reflect the personnel to be procured, the training to be accomplished, and the support to furnish this division. Upon approval of the Primary Programs, they are distributed to the Army Staff and to the major commands and become the basis for important actions at both the Department of the Army level and at the major commands. The timing of this issuance is particularly important as the issued Primary Program documents are the basis for an estimation of the financial resources required to be included in the budget request for the fiscal year being programmed.

Upon receipt of the Primary Programs for FY 1957, for example, by the major commands, these commands relate the work they must do in FY 1957 with the work that was done in FY 1955 and that which is being done in FY 1956, and submit to the Department of the Army a commander's statement and budget summary. These documents contain generally the command interpretation of the over-all impact of the Primary Programs on the command concerned in terms of program plans and their relation to the funds to support them.

This information is submitted to the Department of the Army, and together with the program guidance received from the Chief of Staff, forms the basis for the formulation of the budget for FY 1957 by the Department of the Army staff.

It should be noted from the preceding discussion that program development and the steps of budget formulation are closely interrelated.

After the President's budget is finalized, about 1 January 1956, the Department of the Army Primary Programs for FY 1957 will be revised and sent to the major commands. The timing of the issuance of the revised program documents is important. They provide the basis for the development of

the command programs, which in turn are the basis for the budget execution plans of the command. A budget execution plan is a priced schedule of work to be done and resources to be required. It is a detailed statement by a command of the value of the resources needed to accomplish the workload set up in its programs.

When the command programs are developed, they are passed to the installation commanders, who use the guidance contained in them, and such additional objectives generated within their own installation, to prepare their installation programs. This latter program provides activity heads, such as the Quartermaster, Engineer Officer, Transportation Officer, etc., with the guidance they require to prepare their detailed work schedules and the fund requirements for the fiscal year being programmed.

Thus, we can see how the guidance flows from the Department of the Army down to each echelon and provides the basis for the conduct of operations and establishment of fund requirements.

When the command budget execution plan is completed, it is forwarded to the Department of the Army for review and approval or such modification as is required to make it agree with the latest developments in program or budget action. The command's budget execution plan is then returned as firm guidance for the conduct of operations.

In the meantime the installation staff, using the information submitted by the activity head and the guidance contained in the command program documents, prepares its budget execution plan and forwards it for approval to the major command headquarters. It can thus be seen that the budget execution plan at each level can be used as the basis for the annual funding program and allocation of funds. When the approved budget execution plans are returned from the next higher echelon, they are in effect the approved financial operating plan and provide definitive workload and related fiscal guidance.

On 1 July 1957, the programs of the major commands and installations will go into effect. By this

time, the program development phase will be complete. The programming system then calls for the second and third phases: execution and review and analysis.

It was noted that throughout the development phase of programming, there was a constant relation between program and budget actions. With the introduction of the execution and review and analysis phases, there is a continuation of this relationship. Program execution is concerned with doing the job in accordance with approved program schedules and the financial operating plan (the budget execution plan). Review and analysis is concerned mainly with an appraisal of the quantity, quality, and efficiency of the work done, and whether goals are being met as scheduled. Evaluation is based on reports, staff visits, inspections.

It is obvious that not only at this time but in all phases of programming there is a necessity for a medium which will intelligently relate programming, budgeting and reporting to the activities that go on at the installation level, the point where the work is done. The Department of the Army has provided this medium in the form of an integrated account structure, which is a uniform classification of the activities adaptable for programming, budgeting, performance analysis, manpower control and accounting. The use of this structure will make it possible to relate in a significant manner information and data which has not been relatable in the past. It will provide, in addition, a basis for eliminating duplicating and overlapping reports and for coordinating and integrating the various reporting systems so that reports will serve multiple purposes.

Even though great strides have been made in the application of the Army Program System, it would be an overstatement to indicate that full realization of its objectives has been achieved.

We are continuing to effect improvements in the sequence and timing of our program and budget actions. In addition, we are moving to insure that at all echelons of the Army Establishment programming in definitive terms is the basis for conducting operations.

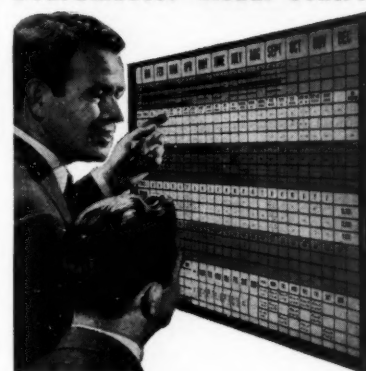
Jungle Destroyer

R. G. LeTourneau, Inc., has developed a jungle destroyer that packs three times the wallop of an M24 tank. Each of its six wheels is ten feet tall and four feet wide. Used for land-clearing operations, the 60-ton vehicle can destroy trees of any size, yet is so light on its feet that it can roll over a pocket watch without damaging it. Its platform is 39 feet long and 11 feet wide, and can support more than 100 tons.

Tin Goose Back

The Tin Goose, the Ford Trimotor transport that hasn't been built since 1934, is going back on the assembly line. Hayden Aviation Co., Los Angeles, will start production of the old airplane in April at the rate of two a week. Beefed up by more powerful engines, it will have a payload of 6,000 lb., and cruise about 125 mph. Despite its low speed the plane has always had the reputation of being an economical cargo carrier.

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In a sample "brainstorm" session, Pfc. Walter C. Mansfield (at blackboard) prepared to jot down solutions to a minefield problem as they are suggested spontaneously by a cross section of Laboratories' personnel.

BRAINSTORMS IN GOVERNMENT

by **Kenneth L. Treiber**
Engineer Research and Development Laboratories
Fort Belvoir, Virginia

MORE than 350 ideas in two hours on solutions to four problems ushered in brainstorming at the Corps of Engineers Research and Development Laboratories at Fort Belvoir, Virginia.

The apparent success of this system of group ideation in what is, to the best of my knowledge, its initial appearance in government leads me to believe that a brief resume of the manner of its introduction may prove helpful to similar organizations.

Initial creative sessions demonstrating conference techniques for the generation of ideas and the solution of technical problems were conducted by Pfc. Walter C. Mansfield of the Chemical Corps' Materiel Command Headquarters, Baltimore, Maryland. Private Mansfield had been an instructor in creative engineering in civilian life with General Electric.

With 40 engineers participating in four sessions, 144 suggestions were brought up for consideration on two petroleum equipment distribution problems, 132 on a bridge problem and 75 on a mine warfare problem.

In each session participants were chosen by the engineer in charge of a particular project. Private Mansfield then presented a general pic-

ture of the situation and defined the problem, stating the most important requirements. All ideas suggested were written on a blackboard, without comments from other members of the session. One idea produced another, a chain reaction building idea upon idea.

The brainstorm sessions were begun at these Laboratories after investigations of the method in industry and at educational institutions showed that it might be used to advantage in a government research and development installation.

Visits were made to the General Electric plant at Schenectady, Massachusetts Institute of Technology and Rutgers University.

At GE, where creative engineering has been underway for several years, Mr. C. F. Hix and Mr. M. J. Rice outlined the use of "creative approach seminars." Dr. John B. Wilbur of M.I.T., explained the creative engineering course given there by Professor John E. Arnold. He indicated that the first step in the school's creative approach was a course for engineers entitled "We Must Learn to Like the Other Guy," stressing that in group sessions ideas are not forthcoming if it is felt that the originator will be "barked at." The applied imagi-

nation course in the Rutgers' curriculum was discussed with Dean W. H. Easton.

In addition to the brainstorm session, GE's Mr. Rice outlined several techniques used to obtain new ideas. One suitable for individual or group use consists fundamentally in adding to, subtracting from, combining, or inverting ideas to be sure all ramifications of a thought are considered. This trains men not to take off too fast in every direction.

Another technique for project engineers is to consult compiled physical laws and effects to start the "gray matter to vibrate" and to get ideas. This is a helpful practice for anyone planning to attend a

brainstorm session. Still another is called "reflection" or "illumination." An idea comes to the engineer during a period of relaxation, after he has been sweating out a problem. Use of a "check list" called "Idea Needlers" is another method of stimulating ideas.

It should be noted that only the time limit on a job restricts the number of brainstorm sessions. A basic thought, applicable here I believe, is that there has to be a "cut-off point." Nothing is ever final. If it were progress would stop. We can always do better. We must be satisfied with a specific degree of improvement.

In closing, I should like to add that I do not see any reason why the creative approach need to be confined to engineering. I think it could be used with profit everytime a group is looking for a new approach or an answer to a problem. As the saying goes, "two heads are better than one, even if one is a blockhead."

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NATIONAL RESOURCES CONFERENCES

from W. J. Baird, assistant commandant,
Industrial College of the Armed Forces

Since the very beginning of the Union of the States, we have believed that over-all control of our military forces must rest with the civilian leaders of the Government.

It is imperative that a great many people understand the problems inherent in mobilizing our economy for war and for the prevention of war. This knowledge and understanding must not be confined to a few top-level military officers. For this reason the Industrial College has extended its educational facilities to those who cannot take the long resident course or enroll in the correspondence course.

Each year the college conducts a series of National Resources Conferences in major industrial centers of the country. Each conference lasts two weeks.

These conferences are a very highly condensed version of the resident course. They outline the world situation and how it affects our national security. They describe in broad but easily understood terms the national resources which are the basis of our security and our position in world affairs.

The conferences do not attempt to "sell" any particular program, organization, or plan. They are intended to be informative, to convey some important, provable facts, and to stimulate thinking about our security problems. Many of the problems covered are still to be solved. They will be solved only when an informed public opinion conveys the will of the people of our Government leaders.

During the two weeks' conference, thirty-two lectures on the subjects shown below are delivered by a team of six officers from all the military services.

In addition to the lectures there are discussion periods on subjects of special importance and interest to conferees and a series of films pertinent to the subject matter. There are also extracurricular field trips to military installations and industrial plants.

CONFERENCE SCOPE

Orientation.—A general survey of the conference with particular emphasis given to its objectives. Effort is made to develop the concept of "economic mobilization" and the significance of a study of it. The mission of the Industrial College and the part the Civilian-Reserve Instruction Branch plays is discussed briefly.

Organization for National Security.—A background lecture designed to give a better understanding of the lectures to follow. The National Security Act of 1947, the 1949 Amendments, the Defense Production Act of 1950 and its amendments, and the part the mobilization agencies play in our present organization for national security are discussed.

Procurement.—This presentation covers procurement practices and procedures within the Armed Service and the legislation behind military procurement. It also covers the problems involved in contract placement, execution, renegotiation and termination, as well as an evaluation of the system from the standpoints of government economy and public convenience.

War Finance.—A discussion of the role that financial policies and financial institutions play in wartime and of the methods used in the past. Future problems are also discussed.

Manpower.—A discussion of certain principles based on present day concepts of manpower, followed by a resume of the world manpower situation (free world vis-a-vis Communism) with emphasis on quality of manpower as an element of national power. Included is a discussion of total population, the labor force, and sources of "extra" workers; a brief of manpower requirements by the armed forces, and by defense and non-defense industry; and the effect of health, education, and controls in manpower utilization.

Strategic and Critical Materials.—A discussion of the mineral and material resources of the United States with emphasis on sources and quantities of supply, means of improving the situation, and prospects for the future.

Internal Security.—A survey of policies, methods, and means of protecting industry and our civilian population against espionage, sabotage, and direct enemy attack. Consideration is given to the problems posed by the atomic weapon.

Public Opinion.—A discussion of public opinion as a fundamental factor in our national strength and thus our security.

Production.—A discussion of some of the over-all production problems that would arise in the event of a future all-out mobilization effort and the effect that the threat of atomic attack has on our planning for war production.

Technological Progress.—A review of the importance of technological progress from the national viewpoint, the military organization for research and development, and some accomplishments and forecasts.

Transportation and Communications.—A survey of the various media of transportation and communications, their contributions to the American economy both in peace and war, and our experience in these two fields during the First and Second World Wars.

Foreign Aid and Mutual Security.—A discussion of the organization and operation of the Mutual Security Program together with the major worldwide developments leading up to it.

Foreign Economic Potential.—Areas covered include: Great Britain, Western European countries, Eastern European countries, Canada, Latin America, Africa, Middle East countries, Far East countries, South and Southeastern Asia countries, Union of Soviet Socialist Republics.

Geopolitics.—An evaluation of geopolitics as a theory of world power development.

Agriculture.—A study of American agriculture as a basic industry.

Economic Warfare.—A discussion of economic warfare and the methods by which it is carried on.

Requirements.—A discussion of the generation of requirements for all-out mobilization for war as they affect the military, civilians, and foreign aid, and a study of requirements computations at Joint Chiefs of Staff level.

Fuel and Power.—A summation of America's position regarding its energy resources, electric power, coal, gas, petroleum, and atomic energy.

Distribution Logistics.—Presents the function and importance of the distribution phase of logistics and our experiences in World War II. Present and probable future problems with some possible solutions are discussed.

Emergency Management.—Identification of emergency management problems, evaluation of actions taken prior to and during the Korean war, and possible future actions.

Civil Defense.—A discussion of the role of Civil Defense in minimizing the effects of a nuclear attack against the United States.

Geoeconomics.—An analysis of the position of the American economy in relation to the economies of the other nations.

Soviet Communism.—A discussion of the history of the political development of the Soviet Union and how it came to adopt Communism.

In each city the conferences are jointly sponsored by a civilian organization and the local military commands. The civilian sponsoring

organization forms an arrangements committee and a selection committee. The latter is responsible for screening and approval of all non-military applications for attendance. The local military commands screen applications from Reserve officers who attend in an active-duty status.

It should be pointed out that civilians desiring to enroll should apply to the civilian selection committee of the civilian sponsoring agency in the city where they desire to attend. Military officers should apply through normal military channels.

SCHEDULE OF NATIONAL RESOURCES CONFERENCES ACADEMIC YEAR 1955-1956

Houston, Tex.	Sept. 19-Sept. 30, 1955	Jackson, Miss.	Feb. 13-Feb. 24, 1956
Detroit, Mich.	Sept. 25-Oct. 7, 1955	Shreveport, La.	Feb. 13-Feb. 24, 1956
Santa Barbara, Calif.	Oct. 17-Oct. 28, 1955	Waco, Tex.	Mar. 12-Mar. 23, 1956
Portland, Oreg.	Oct. 24-Nov. 4, 1955	Savannah, Ga.	Mar. 12-Mar. 23, 1956
Miami, Fla.	Nov. 28-Dec. 9, 1955	Des Moines, Iowa	Apr. 9-Apr. 20, 1956
Ogden, Utah	Nov. 28-Dec. 9, 1955	Chicago, Ill.	Apr. 16-Apr. 27, 1956
Mobile, Ala.	Jan. 16-Jan. 27, 1956	Buffalo, N.Y.	May 21-June 1, 1956
Berkeley, Calif.	Jan. 23-Feb. 3, 1956	Richmond, Va.	May 14-May 25, 1956

Douglas' Jet: 6½ Hours to Paris

The DC-8 will cruise at 550 mph., make nonstop ocean hops regardless of adverse winds.

This week Douglas Aircraft Co., of Santa Monica, Calif., announced that it had ordered its new DC-8 jet transport onto the production line.

The swept-wing airliner, powered by an advanced version of the Pratt & Whitney engine, will fly at 550 mph., carry 80 to 125 passengers, and be capable of making regular nonstop flights between U.S. and European cities regardless of adverse winds. It will be able to fly from Los Angeles to New York in 4½ hours; from New York to Paris in 6½ hours. Deliveries to airlines will begin in 1959.

Douglas' move may give the company the jump on Boeing Airplane Co., its sharpest competition in the jet transport field. Boeing has been flight-testing its 550-mph. "707" prototype jet liner since last summer, and is aiming at delivery in 1958. This date may be shoved back, however, as the Air Force insists that Boeing give priority to its KC-135 jet tanker.

The announcement of the DC-8 came as a surprise to many in the industry.

Douglas has had the big transport under development — and under wraps — for years. It has also been working on a turboprop eyeing particularly the British engines.

But Douglas had to make a choice. Its assembly lines will be choked for the next three years with piston engine planes. It could take on only one new plane—either the jet or the turboprop. In the last six months, several factors tipped the scale in favor of the jet now and the turboprop later. First was the lack of development on the U. S. turboprop engine in the power range required for commercial transports, and the unavailability of British turboprop engines. Second were several dramatic breakthroughs in development work on jet transport engines.

Douglas has not yet announced the purchasers of its jet transport, but its sales prospects are bright.

The company says that the DC-8 will be able to operate from existing major air terminals at operating costs even lower than those of current airplanes. And the airlines are in the best financial position in years, with lucrative longhaul and nonstop traffic building up fast.

The DC-8—a \$70 million gamble for Douglas—isn't expected to water down any of the company's big orders for piston airplanes. The jet will be a luxury flight at first, and will supplement the long-range piston planes. Douglas thinks that production of the jets will be able only to keep up with the normal increase in airline traffic.

There are about 20,000,000 living Armed Forces veterans, who, with their families, comprise two-fifths of the nation's population or 62,000,000 persons.

There were 391,000 known participants in the Revolutionary War.

Five hundred thirty-four thousand persons participated in the War of 1812.



United States Marine Corps, Washington, D.C. A saving of approximately \$113,000 and 67,000 man-hours was accomplished by personnel serving at Marine Corps Headquarters during the period January to June 1955. Individual Record cards required from the field, reducing the number of copies of supply records, more economical distribution of publications and more economical procedures in personnel cases identifications, were among the contributing factors.

New Orleans Port of Embarkation, New Orleans, Louisiana. An improved safety type Catwalk to provide walkways between vessels in dry storage has been developed by this installation. The Catwalk has "Grip Strut" galvanized gratings and aluminum handrails. Maintenance costs have been greatly reduced on this Catwalk costing but \$28.50.

Headquarters Area Command, APO 403, New York. A saving of 240 man hours per week is the effect of the new maintenance policy used by the Headquarters Area Command Ordnance Maintenance Shops since early in April. Statistical data reveals that an average of 120 vehicles per week are maintained by the Shops. The new procedure provides an annual saving of 12,480 productive man hours, and indirectly benefits all units served by this organization.

USS Consolation (Hospital Ship). Crew, patients and visitors were recently "exposed" to economy and cost consciousness through a two-day exhibit set up in the after lobby across from the ship's fountain. Results? They found them in cutting food waste from 24 to less than 6 gallons a day. Salvage equipment was reused, lower wattage lamps in standing lights and many other conservation ideas.

Fort Dix, New Jersey. More than

600 Fort Dix soldiers have been reassigned to new military duties during the past few months, as an equal number of newly-hired civilian employees filled their former jobs under "Operation Teammate." The campaign to replace soldiers with civilians will continue, and has already been instrumental in not only the reduction of overall costs but increasing combat effectiveness.

Seattle Port of Embarkation, Washington. A newly-formed Central Board of Civil Service Examiners for Department of the Army installations in the Seattle area is expected to save the government thousands of dollars. Previously each installation processed its own employment applications. The Central Board, under the technical supervision of John M. Young, director of the 11th U.S. Civil Service Region, is expected to save SEPE only one of 12 agencies, more than \$10,000 annually.

Department of the Air Force. Remember saving money by not raising wheat? In effect, General Electric Company and Ryan Aeronautical Company are doing just that. The J-47 jet engines—powerplants for the Boeing B-47 and North American F-86 Sabre jets, are lasting longer than anticipated. Originally intended to receive major overhauls at 600 hours, the constantly improved J-47 has exceeded normal expectations to the point that twice in recent months the Air Force has happily saved the taxpayers substantial sums of money by cancelling previous orders. This is an example of more national defense—per taxpayer's dollar.

Fort Carson, Colorado. Operation Paper Chase, the Army-wide effort to eliminate paperwork, has met with considerable success at Fort Carson in the six months it has been in operation. Altogether 42 reports which once plagued subordinate commanders are no longer required. Fifteen others are being examined with a view toward elimination.

Naval Air Auxiliary Station, Fallon, Nevada. By using white diatomaceous, mined close to the station and costing 30c a cubic yard, in-

stead of lime for marking out aerial targets, this installation has saved over \$20,000 in the past year. In the past, about 1,000 cubic yards of lime was shipped in yearly at a cost exceeding \$20,000.

Naval Supply Depot, Bayonne, N.J. An estimated saving of \$3,991 annually will be achieved by the Machine Records department through utilization of the addressograph machine in lieu of manually typing static information.

Headquarters Strategic Air Command, Offutt Air Force Base, Nebraska. An idea for a commercial style gas station for government vehicles which originated with SAC's maintenance engineering division has been adopted by USAF and will be included in the new AF Manual 66-12 on vehicle maintenance shops. The experiment which began at Smoky Hill Air Force Base, Kansas in September 1954, showed a 25 percent reduction in vehicles in maintenance shops, and an average savings of 20 minutes downtime each week on each vehicle.

Sharpe General Depot, Stockton, California. A new purchasing plan whereby the Depot will buy every month about \$1-million worth of readily available "common-type" items from commercial sources, is proving a money-saver to the government. Under the new plan, Sharpe will buy between 60 and 70 percent of this amount for use of troops overseas. Purchasing will be done on both a regular monthly billing system and "cash on the counter" basis.

Department of the Navy. A new Navy camera is being manufactured at Gordon Enterprises, Hollywood, California, a camera manufacturing firm, from Navy-owned lenses and Navy-owned camera mechanisms, both taken from obsolete and different cameras. Cost of developing and manufacturing cameras without using the salvage parts would have run as high as \$1,500,000 for the 500 units being made.

Air Materiel Command, Wright-Patterson Air Force Base, Ohio. A decrease of more than \$100-million

in budget demands for spare parts has been effected by the Air Force under the Hi-Valu program since its inception. The Hi-Valu program, although started and monitored by the Air Materiel Command, is shared by the other Air Force Commands. Their participation is limited to the careful issue of these aircraft parts and the rapid handling of serviceable and repairable assets.

Headquarters Sixth Army, Presidio of San Francisco, California. Proceeds derived from sales within the Sixth Army area of property no longer required for government use as of the close of the fiscal year, reached the astounding sum of \$13,244,074. Such sales are conducted at 16 installations within the area, and represent a gain of more than \$5,450,000 over last years total sales.

one of the few republics known to mankind and inspired and perhaps influenced Thomas Jefferson, Benjamin Franklin, George Washington, and other founders of the young American Republic.

Thomas Henry has turned from reporting news to scientific achievements. Prizes from Pulitzer, George Westinghouse, and American Association for Advancement of Science, have been awarded to him. The information for "Wilderness Messiah" was largely acquired while Mr. Henry was Publicity Representative of the Smithsonian Institution.

Human beings had been on the continent of America for fifteen thousand years before the white man arrived. Each migration out of Asia brought new ideas, different purposes, and new blood to a large country with vast resources and many advantages. Due to the impossibility of communication in such a wide land, each group kept together and developed their own form of government or rules by which they lived. At the time of the landing of Columbus, Indians were not the painted, war whooping barbarians as some authors have portrayed them. No doubt the average American Indian at this time had more adequate clothing, better shelter, more medical attention, more and better food, and a good chance for security in youth and old age than did the average Spanish sailor.

The ideas of Degandawida and Hiawatha united five Indian nations into the Iroquois Federation of independent states, ruled by the people, with a central government. Woman suffrage was one of the fundamentals. Child welfare was basic to the Iroquois scheme. Breeding and cross-breeding led to an improved agriculture. Knowledge of forest herbs and roots was used as medicine to alleviate and cure certain forms of sickness. Peace was maintained by means of warfare. Religious beliefs were not those of "Great Spirit" and "the happy hunting ground." Frenchmen and Englishmen could not and did not try to understand the Indians. Torture and pain were an honor to a captured warrior, not just seemingly savage cruelty.

A fascinating thought occurs to the reader of "Wilderness Messiah."



Book Reviews

by D. D. Corrigan

Effectiveness in Administration

"THE MANAGEMENT TEAM," edited by Edward C. Bursk. (Harvard University Press, 221 pages, \$4.00)

While most men and women understand the logic of members of a team working together for success and strength, fewer people apply these principles to organization and business.

"Releasing the Full Potential of the Management Team," was the theme of the Twenty-Fourth National Business Conference, sponsored by the Harvard Business School Association, June 12, 1954. Some 1,300 businessmen attended the sessions, listened to short talks by panel members, asked numerous questions, and participated in the general discussions. Material in "The Management Team" is based upon the proceedings of this conference.

General Lucius Clay's assignment was to discuss the art of delegation, and he draws upon his experiences in the army and as Chairman of the Board of Directors of Continental Can Company for examples of dividing the responsibilities of administration. The most important factor that he has discovered and found most helpful is that the executive must know his people well, in order to properly delegate responsibility and in granting authority so that confidence will result in growing capacity and new challenges.

The address on management communication was ably led by Elmer L. Lindseth, President of The Cleveland Electric Illuminating

Company. He claims that a good communication atmosphere can be shown by example and precept. There is no easy way or cure-all for communication problems, but by application of efforts and hard work, these problems, if not cured, are at least rendered less acute.

Theodore O. Yntema, Vice President-Finance, Ford Motor Company, gave the address on measurement and control. Mr. Yntema feels that business needs a better system of controls to produce better work, and a more effective co-ordination of activities. Mistakes are reduced by systematic forecasts. Proper delegation of authority results in more time for the top executive for constructive work and strengthens profit motivation.

Executives and potential executives will value the material in "The Management Team" for its compactness and "down-to-earth" techniques illustrating the full potential of the management team.

By the Shore of Gitche Gume

"WILDERNESS MESSIAH," by Thomas R. Henry. (William Sloane, 285 pages, \$4.00).

The pen of Henry W. Longfellow expresses a picturesque appraisal of wise and wary Hiawatha, Gitche Manito the Mighty, and Minnehaha, lovely Laughing Water. In startling contrast Mr. Henry narrates the true account of Hiawatha, wilderness messiah, and the history of the Iroquois. This is, however, more than just a record of historical events. This is the record of a people that formed a confederation of

If America had not been discovered by white men when it was, could a different form of society have evolved—with different concepts, different ideas, a different attitude to the Almighty, and a different relationship to nature—without the knowledge of alcohol, the Bible or gunpowder.

Familiar or Familiar

"THE UNIVERSITY SPELLING BOOK," by Thomas Clark Pollock and William D. Baker. (Prentice-Hall, 122 pages, \$1.60).

Too few adults know how to spell correctly the words of the English language. Even after completing high school and finishing college, many graduates still are confused on familiar words that are used every day. It would seem that either the method of teaching or the system of spelling itself is at fault. Several excellent systems have been designed to change the procedure to a less complex form, but until modern society decides our present system is antiquated and old-fashioned, every adult should have a basic understanding of certain principals and rules that may have been forgoten. "The University Spelling Book" has a two page summery of spelling rules that serve as an easy reference. Any student or adult will benifit from this book either as a reference book or for a thorough study.

Particuler attention is given to a system for learning to spell, words frequently misspelled, how to use the dictionary as a spelling aide, and spelling by ear.

Sixteen words were misspelled in this article. Did you easily recognize all of them?

Recommended Reading

"THE MAN IN THE GRAY FLANNEL SUIT," by Sloan Wilson (Simon & Schuster, 304 pages, \$3.50).

The Junior Executive learns to be honest with himself and accepts his private responsibilities. Excellent fiction.

"AMERICAN MILITARY POLICY; ITS DEVELOPMENT SINCE 1775," by C. J. Bernardo and E. H. Bacon. (The Military Service Publishing Co., 493 pages, \$5.00).

The story of national attitudes and policies toward the military establishment. Extensive research has made this a serious study.

"ANYONE CAN SELL," by Frank E. Fehlman. (Printers' Ink Pub. Co., \$.495).

Here is help for timid salesmen, with case histories proving that salesmen can remake their personality.

"FRANCE AGAINST HERSELF," by Herbert Luethy. (translated by Eric Mosbacher. Frederick A. Praeger, 476 pages, \$6.50).

A Swiss journalist studies the past, politics, and the unending crises of France.

Uranium-Striking Colonel Retires

CAMP CHAFFEE, Ark. — Col. Benjamin E. Thurston, who made the news recently with a rich uranium strike, has retired from the Army. Col. Thurston and a partner, Mrs. Jeanette V. Martin, hit the strike on a 10-day prospecting trip into southeastern New Mexico.

CULTURE

A newly-rich woman returned from her first trip to France and was making it known as widely as she could. "And Paris," she gushed, "Paris is marvelous. The people are all so educated and cultured, nothing crude as in this country. My dear, even the street cleaners speak French!"

ON FACTS AND FIGURES: Managerial statistics deals with data and methods which are useful to management in planning and controlling organizational activities. Excluded from this book, therefore, are those statistical techniques which have less direct practical application to management problems. Similarly, little emphasis is placed upon theoretical or mathematical refinements which may be essential in training a professional statistician, but are unnecessary in training a business administrator. Those who wish to specialize in statistics will have ample opportunity to acquire necessary mathematical background in subsequent studies of statistics and mathematics.

The importance of the management function in business administration has grown tremendously during the twentieth century. This development, which has been particularly phenomenal during the past generation, has come about as the result of the gigantic growth of industry. The size and complexity of business organizations has necessitated an increasing amount of attention to formulation of plans, budgets, and administrative control of operations.

Knowledge of managerial statistics is not synonymous with possession of a crystal ball. Statistical formulas are not magical devices which always provide the "correct" solution. Rather, a knowledge of business statistics provides an individual with an awareness of the many shortcomings of existing statistical sources and methods. This knowledge protects the individual against the all too frequent misuses of statistics; it also enables persons to obtain the maximum benefits from the proper application of statistical methods.

Managerial statistics properly employed can be a powerful tool for planning and controlling business operations. Knowledge of statistical concepts and sources of data can be of real value to executives of large and small firms alike. This is not to deny the danger of misuse of statistical methods and techniques. The computation of meaningless averages, index numbers, correlations, and other measures, and the preparation of tables and charts presenting unnecessary information can be of no possible value to management. Judgment and cooperation on the part of both management and the business statistician are essential to the realization of the maximum benefits possible from managerial statistics.

—from "MANAGERIAL STATISTICS," by Kermit O. Hanson. (Prentice-Hall, 306 pages)



SERVICE SCHOOLS

Naval Air Station, Pensacola, Florida. The first class of the Navy's newly inaugurated Aviation Officer Candidate program started last month with twenty-one young college graduates from various parts of the nation. Initial training will consist of four months of pre-flight and general indoctrination. Upon completion, they will be commissioned ensigns and begin 14 months of flight training. They will be obligated to serve two years on active duty after completion of flight training.

Headquarters Seventh Air Force, APO 915, San Francisco. The Management Course for Air Force supervisors is rounding out its sixth consecutive year, and has graduated thousands of officer, enlisted and civilian supervisors. During the first five months of this year, 15 officers, 159 noncommissioned officers and 16 civilian supervisors have successfully completed the course. At the present time 313 are awaiting their turn to attend.

Caterpillar Tractor Company, Peoria, Illinois. A novel school to train 15 Seabees who will operate and maintain the 24 track-type tractors and 16 electric sets to be used by Rear Admiral Richard E. Byrd's expedition to the Antarctic next November, is in operation. The equipment, manufactured by the Caterpillar Tractor Company, will operate in temperatures of minus 65 degrees. The school is under the direction of Caterpillar's Service Department.

Seattle Port of Embarkation, Washington. During the year ending June 30th, 150 individuals from "top and middle management," completed a 12-hour course in Work Simplification. Some noteworthy results have been the saving of 7,318 man hours with a cash value of \$18,952.87 and 193 miles in legwork cut out through work

flow distance elimination. Lt. Col. E. V. Harnstrom, Chief of the Management Division, has modeled the program from successful ones in operation at many large commercial firms.

Northwestern University Traffic Institute, Evanston, Illinois. Forty-two key Air Force personnel, recently completed a three-week training program in motor vehicle safety and traffic control. This is the first course offered by the Institute for the Air Force. Similar courses for the Army have been in operation for almost 10 years. The men studied methods of accident investigation and traffic law enforcement, and application of civilian and military traffic law and regulation to Air Force traffic control problems.

Redstone Arsenal, Huntsville, Alabama. The Methods Improvement course in operation at Redstone is credited with an average saving to the arsenal of \$20,000 a month for the six months since inception. The savings are a result of improvements made by graduates of the 40-hour course. Under the direction of the Comptroller, the Methods Improvement course conducted by Mr. William C. Dunlap, is given twice a month with 12 students to a class.

Washington, D. C. The first Joint Military-Industry Symposium on Packaging and Materials Handling with the theme "What is new? What is Needed?" will be held in Washington on October 10, 11 and 12. Information may be secured from the office of the Chief of Naval Materiel, Department of the Navy, Washington 25, D.C.

The Adjutant General's School, Fort Benjamin Harrison, Indiana. Four Manpower Control Officer courses will be held during Fiscal Year 1956. The six-week courses will be designed to qualify field

grade officers and key civilians. Details are contained in Circular 350-4. Classes are scheduled to begin on 23 September, 6 January, 2 March and 27 April.

Army Electronic Proving Ground, Fort Huachuca, Arizona. Arizona College students have filled 20 of 35 technical positions opened this summer at the Proving Ground's first coordinated Student Trainee program. Undergraduates and graduates from coast to coast, receive ratings from GS-2 to GS-5 on the basis of their technical education. The program also enables technically trained college men to acquaint themselves with the Signal Corps' mission at the Proving Ground.

Personnel Management for Executives, Civilian Personnel Center, Pentagon, Washington, D.C. Five courses will be offered during Fiscal Year 1956 for civilians GS-12 and above, and officers of comparable rank. Starting dates are September 12th, October 17th, January 23rd, March 5th and April 9th. Using the case method of training as developed by the School of Business Administration at Harvard University, the courses were extremely popular last year.

National Defense College of Canada, Fort Frontenac, Kingston, Ontario. Three United States Military Officers were among those graduated recently at the National Defense College. Colonel Thomas C. Foote, USA, Captain C. M. Keyes, USN and Colonel Norman J. McGowan, USAF, were the US participants.

Marine Corps Schools, Quantico, Virginia. 75 enlisted Leathernecks have been selected to attend the Officers Candidate Course starting early next month. From the 600 applicants the lucky 75 upon graduation of the 10-week OCC course will be appointed second lieutenants in the Marine Corps Reserve. Next, they will be assigned to the basic officers course at the Marine Corps School. Those who complete the basic course can apply for transfer to the Regular Marine Corps.

Stewart Air Force Base, New York. A management seminar for

middle-management personnel was recently completed by twenty-one commanders and key staff officers. The course under the direction of Captain Leo C. Baca, Base Manpower Management Officer, was conducted by the New York State School of Industrial and Labor Relations, a unit of Cornell University. The course was divided into eight weekly sessions of two hours each.

Fleet Air Defense Training Center, Dam Neck, Virginia. Construction has started on a new guided missile school to train personnel in maintenance and operation of such weapons. Approximately 350 men will be assigned to guided missile training.

Aberdeen Proving Ground, Maryland. 57 Officers were recently graduated from the nine month Ordnance Officer Advanced Course at the Ordnance School. Major Oren W. Bryant, Ordnance Corps, was the honor graduate.

Fort Belvoir, Virginia. Captain Cecil Mumma, post food supervisor at the Engineer Center, is determined his mess stewards will be afforded the ultimate in training. He has arranged a bit of glamor to the course with the cooperation of Washington's Mayflower Hotel. Each of his students will work with one of the hotel chefs in the hotel kitchen for two weeks. Three men are planned for each of the two week periods, and it will continue for the remainder of the summer. The program was established at no cost to the government.

Lackland Air Force Base, Texas. New and improved techniques in oral surgery are being taught to student officers of the dental service at a newly organized school in the 3700th Base Hospital. Under the direction of Colonel Richard J. Burch, the school offers up-to-date methods in the diagnosis, surgery and adjunctive treatment of diseases, injuries, defects of the human jaws and associated structures.

Naval Station, Newport, R.I. The Wave Officer Indoctrination School recently graduated its third class under the Officer Training Program for women. Fifteen graduates are

line officers and 11 are officers in the Medical Service Corps.

Fort Sam Houston, Texas. Graduation exercises were held recently at Brooke Army Medical Center for 271 officers and 181 enlisted men and women who completed courses at the Medical Field Service School. Colonel James L. Snyder is Commandant of the School.

Electronics Technicians School, Treasure Island, California. Forty-five career men in the Navy received certificates of graduation last month from the Electronics Technicians School. It was the first full graduation under the conversion program established to train petty officers as highly-skilled electronics technicians.

Supply Management Course, Fort Lee, Virginia. The Supply Management course designed to teach integrated supply management based on sound businesslike principles to key personnel in managerial positions, will graduate on the 16th of this month. New classes during Fiscal Year 1956 will convene on 26 September, 3 January and 2 April.

Quartermaster School, Fort Lee, Virginia. Marking the 45th anniversary of the founding of the Quartermaster School revealed in addition a new all time record for the total number of graduates. A total of 19,971 officers, enlisted and civilian students received diplomas during the fiscal year just ended. Previous records of 16,773 set last year, were believed then to be the largest possible number of students.

United States Marine Corps. 1977 military billets are being converted to civilian positions as a result of a special service-wide study. The Marine Corps will accomplish the military-to-civilian conversion with funds to be provided in the 1956 appropriations. All commands have been advised that military personnel will be used only in these specified jobs when civilian personnel, due to a local labor shortage in the particular occupation, are unavailable.

NO SHORT-TIMERS IN RADAR PLANES

By this time you should have read many inches of copy about the new WV-2 bird in our concrete nest . . . We concur with all the good things that have been said. But there is a lighter side, and for the full picture of the WV-2, maybe you ought to hear about it.

This is a plane with great endurance. During the long wait for its arrival, Lt. Al Trecartin prophetically remarked that flight time in the WV-2 will be computed by calendar rather than wrist watch.

This leads to a whole series of thoughts like:

Who will take morning muster in the aircraft?

What percentage of the personnel embarked will be eligible for local in-flight leave?

How early must requests be submitted for accommodations in the after station rest camp? (The WV-2 has bunks, a galley, tables and chairs for crew not on watch in the long-flying plane.)

In order to forestall any operational or administrative problems growing out of this new concept of flight duration, several directives have been promulgated:

1. Each crew member scheduled for a WV-2 flight must have a set of TAD (1) orders (no expense to the government).

2. If any plane has not returned within two months of takeoff, the S.D.O. (2) is to alert search and rescue.

3. A pilot who fails to log 12 months worth of flight time in one hop is to have the phrase, "Short Timer's Attitude," inserted in his next fitness report.

4. After one week in flight the crew concerned is permitted to change the designation of its mission from Airborne Early Warning to Careworn Every Morning.

—The Pointer

Key West (Submarine T-1). Cooks of this Key West based submarine came up with a new one recently when they set up a charcoal boiler on the sub's small deck and served "steaks as you like em" while other ships crews in the vicinity, drooled appropriately.



CURTISS-WRIGHT TURBOELECTRIC PROPELLERS

enable LOCKHEED C-130A
HERCULES

to fly "High and Fast
or Low and Slow"

The Lockheed C-130A Hercules — high speed, long range aerial freighter in quantity production for the Air Force — meets advanced requirements for air mobility of personnel, cargo and equipment. Its three-bladed Curtiss-Wright Turboelectric Propellers provide the most efficient means of converting engine power into useful thrust... facilitate low as well as high altitude operation, at both low and high speeds.

The Lockheed Hercules is one of an impressive list of turboprop-powered aircraft using Turboelectrics. These propellers, with one-piece extruded, hollow steel blades, feature full synchronization... full feathering by either manual or automatic means... fast reversing... single-lever power control.

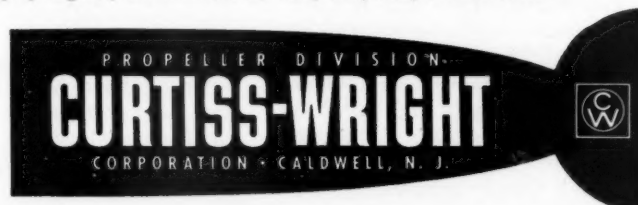
Turboelectrics have been selected for many advanced long-range aircraft types, including the Douglas YC-124B and Boeing YC-97J transports, and the Boeing XB-47D bomber... also for such turboprop types as the Convair XFY-1 and Lockheed XFV-1 vertical take-off fighters... and for experimental aircraft such as the McDonnell XF-88B and the Republic XF-84H turboprop fighters.

Turboelectrics are specified for the major U. S. turboprop engines, which include the T-38, T-49, T-34, T-56 and T-40.

YOUNG MEN! JOIN THE U. S. AIR FORCE



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Washington Management

Department of the Air Force. Donald A. Quarles, the Defense Department's top authority on the earth-circling satellite program, was named by President Eisenhower to succeed Harold E. Talbott as Secretary of the Air Force. A former vice president of Bell Telephone Laboratories and Western Electric Company, Secretary Quarles was president of the Sandia Corporation when he became assistant secretary of defense in September, 1953.

Department of the Army. Secretary Brucker announced recently that Major General Paul D. Harkins, USA has been assigned as Army Assistant Chief of Staff G-3 (Operations). Prior to his assignment to the Pentagon in 1954, General Harkins served in Korea as Commanding General, 24th Infantry Division; Commanding General, 45th Infantry Division and Chief of Staff of the Eighth Army.

Department of the Navy. The Navy has recently leased two R6D SKYMASTER cargo planes to two commercial air cargo companies under a new lease program approved by the President's Air Coordinating Committee and designed to increase the air cargo lift capabilities of the United States. Two R5D cargo planes are being leased to two other airlines. The R6D's are being leased to Slick Airways, Incorporated and the Flying Tiger Line. The R5D's are being leased to Riddle Airlines and Trans-Ocean Airlines. Terms for the two R6D's (DC6-A) are \$21,000 per month or \$252,000 per year. The R5D's will rent for \$15,000 per month.

Department of the Air Force. Announcement has been made to accelerate initial production of two advanced jet fighters, the F-101 all-weather interceptor and the F-104 day fighter. Changes in the aircraft production are being made within the funds already approved by Congress.

Department of Defense. President Eisenhower has named Reuben B. Robertson Jr., an Ohio paper company executive, to succeed Robert B. Anderson as Deputy Secretary of Defense. Mr. Robertson, a 47-year-old former World War II Army Officer, was recently a member of the Hoover Commission task force that studied the Defense Department.

Department of the Army. Additions to the Army's fleet amphibious vehicles will be made soon when delivery of 14 new 100-ton BARCs ordered recently begins. Capable of carrying a 60-ton pay load from ship to shore and then move on inland, the BARC has undergone extensive testing since the fall of 1952.

Department of the Navy. The Navy will run its biggest Arctic operations this summer using some 117 ships to send supplies to the Far North bases and carry equipment for building the Dew Line or Distant Early Warning Line of Radar. A spectacular mission, shiploads of radar equipment must be taken up and around the top of the continent, through Amundsen and Coronation Gulf and Simpson Strait, and left at the station sites.

Department of Defense. In Executive Order 10621, President Eisenhower designates and empowers the Defense Secretary to do a number of things without the approval, ratification, or other action of the President. The Secretary can if he wishes, redelegate the authority to any of the Secretaries, Under Secretaries or Assistant Secretaries of the military department.

Department of the Air Force. Command of the Thirteenth Air Force has been switched from Far East Air Forces and placed under the Pacific Air Force. Brig. Gen. William L. Lee, USAF, Commander of the Thirteenth Air Force will continue to head Air Force activi-

ties in the Philippines, but will now report to Major General Sory Smith, Commander of the Pacific Air Force, in Hawaii.

Department of the Army. The Signal Corps has announced that the General Electric Company is building a new electronic automatic component assembly system capable of handling all types of military electronic equipment. The system operates automatically by means of punch cards, and will serve to eliminate human errors in production which has caused a large portion of electronic communications devices to be rejected by the military services.

Department of the Army. Two field artillery units equipped with two of the Army's most modern weapons, the Honest John rocket and the 280mm atomic cannon, have been assigned to the Far East. The Honest John unit, which will go to Japan, is the 5th FA Battery which recently finished training at Fort Sill, Oklahoma. The 633rd FA Battalion, armed with the 280mm cannon, will go to Okinawa.

Department of Defense. Of interest to all servicemen is the task force now being formed to launch a careful and detailed study into the report and recommendations forwarded by the Hoover Commission. Headed by Charles A. Coolidge, Special Assistant to Defense Secretary Wilson, the task force must determine the extent to which these proposals will be carried out.

Department of the Army. Plans are being completed to establish a Mathematics Center to solve technical problems beyond the capabilities of normal Army facilities. A committee of scientists, led by Dr. Ivan R. Hershner Jr., of the University of Vermont, is now studying possible sites for the location of the Center. Its organization will be set up through a contract with an educational or research institution.

Department of the Navy. The "new look" in Navy aircraft is appearing in the F3H-2N Demon with the new grey and white color treatment. The top of the wings and fuselage are painted a dull grey and

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a glossy white to the underside. The F3H-2N made by McDonnell Aircraft is powered with the new J-71 Allison instead of the Westinghouse J-40 which propelled the F3H-1N.

Department of Defense. A recent announcement was made by the National Park Service, that servicemen will not be required to pay admission, guide, elevator, automobile and other charges normally prescribed, as long as they are in uniform. The new policy has been adopted to benefit morale through cost-free visits to numerous scenic, historic and scientific features which predominate the areas administered by the National Park Service.

Department of the Army. The first diesel-powered, mechanical hydraulic transmission locomotive produced for military use, was formally accepted recently. The 48-ton experimental locomotive, built by the Baldwin-Lima-Hamilton Corporation of Eddystone, Pennsylvania, was designed using a minimum of critical materials usually in short supply during national emergencies. It is also expected to simplify maintenance and operational requirements.

Department of the Navy. The use of ultrasonic power to cause cavitation—the expansion and contraction of air pockets—in liquid detergents enabling them to clean precision instruments, parts and intricate mechanisms without disassembly, was recently demonstrated at Naval Air Station, Pensacola. Supervised by the Bendix Corporation, representatives from interested Bureaus throughout the Department were present. Two of these units have been in use at Pensacola for approximately six months. The cost of the complete unit is approximately \$7,500, however a single unit provides an estimated saving of from \$15,000 to \$20,000 a year.

Enlistees in the Women's Army Corps must be 18 to 26 years old, at least five feet five inches tall, weigh no less than 100 pounds and be high school graduates.



NEWS BRIEFS

from the

SERVICES

Jeffersonville Quartermaster Depot, Indiana. Representatives of Quartermaster Depots in Ogden, Utah; Richmond, Virginia; Philadelphia, Pennsylvania; and Jeffersonville, Indiana held a conference recently with personnel from the Office of the Quartermaster General to discuss changes in established accounting procedures considered necessary for effective Army Industrial Fund operations within the Quartermaster System.

Edwards Air Force Base, California. The Republic XF-84H experimental turboprop fighter plane made its first flight successfully recently. The new plane, which is designed to test the feasibility of supersonic propellers of turboprop-type (propeller-driven which uses jet power to turn the props at high speeds) fighters for operational service with America's Armed Forces. The XF-84H remained aloft for 35 minutes on the maiden flight, most of which was made at an altitude of 20,000 feet.

USS Forrestal, Naval Shipyard, Portsmouth, Virginia. The world's largest warship and first of a new class of attack aircraft carriers, will be commissioned at 2 P.M. Saturday, October 1, 1955. Rear Admiral I. N. Kiland, Commandant of the Fifth Naval District, will read the commissioning directive placing the Forrestal in active service. Captain Roy L. Johnson, USN, will take command of the new warship. Three sister ships, the Saratoga, Ranger and Independence are presently under construction.

Foster Air Force Base, Victoria, Texas. The new 19th Air Force recently activated gives the Tactical Air Command three numbered Air Force and raises to 16 the total in the United States Air Force. Consisting of fighter-bomber, day fighter and light bombardment units, the 19th will be maintained in constant readiness to move to any area

in the world in the event of threatened aggression.

Headquarters Ninth Field Army (Provisional), Fort Sam Houston, Texas. The Ninth Army has become operational, and will participate in Exercise "Sage Brush" a joint Army-Air Force field test scheduled late this fall. Sage Brush will be under the overall command of Air Force General O. P. Weyland, Commanding General of the Tactical Air Command.

Second AmTrac Battalion, USMC, Camp Lejeune, North Carolina. Several new LVT-P5 AmTracs have been received by the Second Battalion, replacing the LVT3C. More than 200 are slated for arrival, and mark a step forward for this important type vehicle.

Yuma Air Force Base, Arizona and Nellis Air Force Base, Nevada. The second All-Jet Fighter Weapons and Gunnery Meet will be held at these installations late this month. Scheduled September 26th to October 8th, the meet is designed to provide the best possible peacetime evaluation of pilot and crew proficiency as well as current training methods. Last year the air-to-air rocketry events were won by Crew Training Air Force of the Training Command. Fighter-bomber laurels were also won by the Air Training Command.

San Francisco Port of Embarkation, California. Major General Paul F. Yount, Army Chief of Transportation, presented the Department of Army Award of Merit to Brigadier General W. J. Deyo, Jr., Port Commander, at a Fort Mason ceremony recently. SFPE has received national recognition for its safety record for the second time in two years.

Headquarters Second Air Force (SAC) Barksdale Air Force Base,

Louisiana. Major General George W. Mundy, USAF, has assumed duties as the new Deputy Commander. Prior to his assignment, General Mundy served as Director of Supply and Services in the office of the Deputy Chief of Staff, Maintenance, Headquarters United States Air Force.

450th Fighter Day Wing (TAC), Foster Air Force Base, Texas (see cut). Colonel C. M. Talbott, USAF, Commander of the 322nd Fighter Day Group, took delivery recently of six F-100C Super Sabres. The new long-range Super Sabre that can pack an A-bomb faster than the speed of sound was delivered to the Tactical Air Command at the Los Angeles plant of North American Aviation. The 322nd Group is the first TAC unit to receive the F-100C.

Hunters Point Naval Shipyard, San Francisco, California. The Navy aircraft carrier Bon Homme Richard, will be recommissioned early this month. The ceremonies will mark an end to a 27-month conversion period, which equipped the carrier with a canted deck and steam catapults.

Naval Forces, Newport, Rhode Island. Four former Liberty ships

have been commissioned recently to be the first Naval ocean radar station ships. They will operate out of Newport, R.I., as offshore units of the continental air defense system. Designated as YAGR's they are: USS GUARDIAN (YAGR-1), USS LOOKOUT (YAGR-2), USS SKYWATCHER (YAGR-3) and the USS SEARCHER (YAGR-4). Designed to stay at sea for lengthy periods, they are reported to be the ultra in habitability equipment and features.

14th Army Aviation Company, Fort Riley, Kansas. The Army's first fixed wing aviation company is now a going concern with its 21 Otters (U-1 light cargo airplanes). Companies of this type which will normally be assigned to field armies, are organized under tentative TOE 1-107. Additional companies will be formed depending on the availability of trained pilots and airplanes.

USS Boxer, Far East. The aircraft carrier Boxer has started her seventh tour in the Far East. The 27,000-ton ship, commanded by Captain James H. Mills Jr., USN, has had more cruises in the Far East than any other carrier. Carrier Air Group 14 is on board, and in 1953, this same air group operated from the Boxer as the first all-Naval

Reserve air group to engage in the Korean hostilities.

Fifth Coast Guard District Headquarters, Norfolk, Virginia. Assistance calls received are running far ahead of previous years. By mid-year, calls were running nearly 100 ahead of the 618 cases handled during the same period in 1954. Most of the increase is attributed to the increase of small boating activity in the area.

USMC All-Weather Fighter Squadron 531, Cherry Point, N.C. Commanded by Lt. Col. A. M. Hearn, USMC, VFM (N) 531 lays claim to the 2d Wing's record of having flown more than 1000 hours per month for the last four months. Over 400 hours of this monthly total were night-flying missions.

Army Awards Contracts For 21 More Helicopters

FORT WORTH, Tex.—Bell Aircraft Corporation's helicopter division will build 21 Army H-13H helicopters under a contract totaling nearly one and a half million dollars.

The H-13H, a more powerful version of the 200 hp H-13G Army and Air Force evacuation, training, reconnaissance and observation helicopter, is powered by the 250 hp Lycoming VO-435 engine. Derated to 200 hp for use in the Bell machine, the H-13H shows improved high altitude, hot weather performance, and reduced maintenance.

A commercial model H-13H, the Bell 47G-2, recently made the headlines by landing and taking off from the 15,771-foot peak of Mount Blanc in Europe with a pilot and passenger aboard.

Deliveries are scheduled to begin in June of 1956. All 21 helicopters are to be equipped with radios, dual controls, winterization kits, litters and night flying equipment. A new feature added to the H-13H is all-metal main rotor blades.

Besides the new helicopter, Bell is developing the tilting-rotor type XV-3 convertiplane and the XH-40 utility helicopter for the Army.

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ARMED FORCES MANAGEMENT



Long Range Super Sabre—A potent long range punch can now be delivered by Tactical Air Command units flying a new version of North American Aviation's Super Sabre, the F-100C. Capable of carrying atomic bombs at supersonic speeds, the new fighter has been assigned to the 450th Fighter Day Wing at Foster AFB, Texas.

What's NEW in Suggestions?

U.S. Naval Air Station, Pensacola, Florida. In colorful ceremonies recently, 42 employees were the recipients of suggestion award checks. This brings the total for this year above the 300 mark. "Almost every employee, it was stated, can think of a 'better' way of doing his job, and all of you are urged to continue participation in this program."

Transportation Corps, United States Army. Employee suggestions by military and civilian personnel of the Transportation Corps saved the federal government \$90,000 in the first three months of 1955. One out of every six of the 799 suggestions were adopted, and awards totaling \$3,101.20 have been paid to the lucky 114 civilian employees. Twenty-five military personnel received non-monetary awards.

Lycoming Division, Avco Manufacturing Corporation. Mr. Vincent Fagella was recently awarded \$175 for his suggested change in the process of machining prop shafts, thereby reducing operational time. Fagella's award won top honors for the month over 34 additional awards. This brought to \$23,464.79 the total amount paid employees for beneficial suggestions this year.

VMJ-2, USMC Air Station, Cherry Point, N. C. Lieutenant Edward W. Lifset, USMC, Squadron Intelligence Officer, designed an identifying device named "hot shot," which has taken the station by storm. Pilots are given the chance to identify the aircraft on an illuminated slide, and push one of two buttons on a little box marked "friendly" and "foe." Should a pilot push the friendly button when an enemy plane is shown, the whole ready room is notified of the fact by a loud, insistent buzzer.

Utah General Depot, Ogden, Utah. Brigadier General Herbert A. Hall, Commanding General, recently announced awards totaling \$430 for 27 employees, bringing the two-month total to \$945. Averaging a saving of \$9000 for the government the suggestions submitted for the two months concerned the improvement of activities and methods at the Depot.

Lackland Air Force Base, Texas. Two Lackland employees recently pocketed suggestion awards totaling \$120 for improvements in the maintenance of Air Force jet aircraft by the 3700th Field Maintenance squadron. Venton K. Myers, received \$100 for designing a gyro transmitter tester for the T-33, enabling a \$2221 annual labor saving. Richard B. Newman was awarded \$20 for developing a check list record for the J-33 type engine.

NORPAC, Military Sea Transport Service. Captain C. R. Dudley, USN, NorPac Commander recently presented six suggestion awards and one superior accomplishment award to Ann C. Peterson, Donald A. DeVos, Hubert E. Romagosa, Emily Karstrom, Charles L. Amundson, Dale Sage and Janice V. Wilson.

Presidio of San Francisco, California. Inventive tendencies combined with the Civilian Employees Incentive Awards program has placed an extra \$90 in the wallet of Delbert O. Tanner, Signal Maintenance employee.

Air Materiel Command, Wright-Patterson AFB, Ohio. Mr. Lloyd E. Hayer, a packaging and presentation specialist at HQ AMC, is top man on the awards totem pole. So far, he has received \$2,250 for making three suggestions. We of ARMED FORCES MANAGE-

MENT, believe Mr. Hayer is the top award winner in the entire Armed Forces. Is there one who disagrees?

Air Anti-Submarine Squadron 26, Norfolk, Virginia. Kerry P. Briard, leading seaman aircraft ordnance man second, RCAF, now on exchange duty, has solved an ordnance problem in anti-submarine work with the S2F-1 "Sentinel." Briard designed and installed a wirecutter on the plane's leading edge to prevent malfunction of the "pigtail wire," an electrical connection between the electrical circuit of the aircraft and the propelling charge of the rocket motor on the anti-sub missile.

Savanna Ordnance Depot, Savanna, Illinois. A few winners at Savanna for cost-saving ideas recently were Lloyd L. Ensich who picked up \$85, Merrill A. Kuhse, \$60, LaVerne W. Calvert and Gerald L. Meyers, \$85, and Robert N. Bainbridge \$25.

6486th Field Maintenance Squadron, Seventh Air Force, APO 915, San Francisco. A saving of \$864 per month is being realized in this organization thanks to the management improvement suggested by Mr. Walter W. T. Ching. His idea to re-work C-124 Exhaust Stack Balls in addition to the dollars, cuts down on packing and transportation expense in returning them to the Z. I. and materially reduces possibility of AOCF delays.

Naval Supply Center, Oakland, California. A novel suggestion recently converted a surplus stock of soda and acid, or foam type tanks into water pump type fire extinguishers. A savings of \$19 on each changeover was reported. The method, which has been adopted by other Twelfth Naval District activities, involves lengthening the pump barrel with a fitting of copper tubing.

McClellan Air Force Base, California. The latest report from the Management Services Division of the Comptroller's Office, fourth quarter FY 55, covers a list of suggestions and improvements adding up to millions of dollars. The

largest amount saved by any single idea was \$7,938,000, and was initiated by Paul Sweikar of the Supply Division.

San Francisco Port of Embarkation, Fort Mason, California. During Fiscal Year 1955, SFPE personnel submitted 381 suggestions or an increase of 34 per cent over the preceding year. Eighty-nine of these, an increase of 82 per cent, were adopted and cash awards were paid totaling \$1,903. First year savings were estimated at \$39,029. The largest estimated saving, \$7,584, resulted from a bus transportation consolidation idea of Master Sergeant Leslie Beringer of Personnel Movement Division. He received a \$10 award and a Letter of Commendation from Brigadier General W. J. Deyo, Jr., Port Commander.

Whiting Field, Milton, Florida. Lt. C. W. Smith and aviation machinist's mate, H. F. Orman, were recently commended by Captain Masterson, USN, Commanding Officer, for their work in developing and building a masking paper dispensing device used for painting aircraft. An estimated 175-man-hours per quarter will be saved at Whiting alone, and details have been forwarded to the Navy Department for possible Navy-wide use.

Fifth Field Maintenance Squadron, Travis Air Force Base, California. Master Sergeant Daniel M. Potter has suggested two inventions which will save the Air Force approximately \$37,000 per year. The first is a positive nose lock for a B-36 which holds the nose switch in place so the nose wheel cannot retract. The second is an oil line die thread chaser, which cleans the threads on the alternator and constant speed drive of a B-36 in 15 minutes.

Scott Air Force Base, Illinois. Colonel Ross Ellis, Deputy Base Commander, recently presented awards to six civilian employees for their time and money saving suggestions. Robert A. Koch collected his third award check, this time for \$85. Others ranged from \$10 to \$50, and all will contribute to a

Naval Supply Center, Norfolk,

Virginia. Two Norfolk Naval Supply Center workers recently received the first superior accomplishment awards presented at this installation. Ruth H. Killingsworth and William T. Bobbitt each received awards of \$200.

Camp Chaffee, Arkansas. Major General W. L. Mitchell, Post Commander, recently presented cash awards to Captain Erman P. Carnegie, 5th Armored Division G-2 officer and Master Sergeant Louis M. Mick of the Provost Marshal Section. Captain Carnegie received in addition to a check for \$25 a letter of commendation for his suggestion simplifying requests for service school clearances. Sergeant Mick received \$15 for a new method of registration for casual personnel.

USS Lake Champlain (Aircraft Carrier). Two pipefitters, A. E. Grass, FP3 and R. J. Warnemont, FP3, have designed a simple device which will lift deck drains out for cleaning and repairing in a matter of minutes. Previously it required 2 men working an average of 10 hours to remove each drain, or approximately \$20 per drain. An aircraft carrier has approximately 450 such drains. The new device is made at a cost of about 30 cents worth of scrap.

Fort Sam Houston, Texas. Seven post employees shared a total of \$125 for their participation in the awards program recently. Top cash winner was Hollis W. Smith, Post QM section who received \$35, whose suggestion prevented excessive damage to machinery in the QM Laundry.

Chanute Air Force Base, Illinois. Teamwork of two Chanute civilian employees in the suggestion award program in the past five years has netted for the Air Force an estimated savings of \$67,643.19 and for the two men—\$682 in cash awards. Hans G. Bechmann and Iver C. Lohmeyer, have worked together on a total of nine accepted ideas.

Seattle Port of Embarkation, Washington. What SEPE officials term a "substantial increase in efficiency," has resulted from a suggestion to install a commercial "flat-time" rate schedule in the

maintenance branch of the Equipment Division. The plan suggested by L. W. Kelly, provides a commercial rate schedule for every repair. The established time is entered on every job order, and inspectors check upon completion. Shop personnel, it is reported, rarely take longer than the commercial schedule, and in most instances are beating the estimated time.

Park Air Force Base, California. Norman H. Stevenson of Parks Finance Office, was recently awarded \$135 for a suggestion which will save the Air Force thousands of dollars. His suggestion led to the changing of AF regulations and accounting for airmen on AWOL status.

Naval Air Station, Alameda,, California. Captain J. W. Bottoms, USN, NAS Supply Officer, recently presented seven employees with cash awards in excess of \$200 for their suggestions. Harry C. Wills received \$55 for his idea to use headset-type telephones in the purchasing section. Ralph L. Dorrance and Starling H. Smith, together with Vedder E. McCaustland, received \$80 each for an improved method of packaging and shipping F9F Tail Assemblies.

\$38-Million For Suppliers

The Norfolk Naval Supply Center stocks 536,000 separate items worth more than \$600 million.

The base is marking its 36th year of operation.

Enough food goes through the center each day to feed the city of Norfolk. The cold storage plant at the Naval base has a capacity of 12,508,261 pounds of fresh and frozen provisions.

The dry provisions warehouse issues an average of a million pounds per day of stores to ships and shore bases.

A typical aircraft carrier order includes 100,000 pounds of flour, 60,000 pounds of sugar, 964 cases of shortening, 16,000 pounds of canned peas and 25,000 pounds of coffee.

The supply center does an average of \$19 million worth of business each month. It serves 1400 customers 267,000 items.

Job Engineering

(Continued from page 9)

coating and silvering, cementing, and etching. Within ten days after the jobs had been engineered, 25 persons were employed at Grade 5 and 10 at Grade 8. This ratio that the labor market could supply led to still further revision of work scheduling and refinement of job designs so that a greater part of the work could be done at the lowest level. This called for more supervisors and more job training than the first plan anticipated.

Meanwhile, employees in the original cadre at Grades 8, 12, and 15 were given intensive training for promotion to jobs requiring higher skills, including supervision and how to give on-the-job training.

Results: The plan served the need of the Shop well. The proposed employment pattern was generally adhered to, with more job engineering than originally anticipated, even though the labor market analysis had been thorough and far enough in advance to provide data for expanding the operation as fast as new work came in. The Shop was manned without back tracking. There was no slowdown of production or excessive production or training costs, or other indication that job design was not in keeping with what the labor market could supply.

The Army Finance Center, Indianapolis, Ind., Claims Examining Units—1952-53

Problem: The Army Finance Center, located for several years in St. Louis, Mo., was directed to transfer all operations within a period of a few months to Indianapolis, Indiana. Only 25% of the civilian employees, largely Grades 4 and 5 Claims Examiners, indicated a willingness to transfer. Availability and skills surveys in Indianapolis indicated that there were practically no persons available with training and experience similar to that required for analysis and adjudication of claims. Some means had to be found for manning with the skills required an estimated 700 positions.

Facts Bearing on the Problem: Space occupied by the Center was needed for manufacture of ordinance items for use in Korea. New

quarters were available at Ft. Harrison at Indianapolis. From six to 12 months training is normally required to make a competent Examiner at Grade 4 level, two years for Grade 5. Civil Service registers of clerical eligibles were practically depleted in Indianapolis, but surveys showed an ample supply of trainees for both Grade levels. More work was expected because of the expanding Army and additional claims from dependents of soldiers.

Analysis: Study of workload showed that about 30% of claims processed were Grade 5 level cases, 60% Grade 4 level. The remaining 10% were at Grade 3 level. Formerly many Grade 5 Examiners had been required to classify the cases so as to route them to the proper levels for handling. It was determined that it would be most economical to leave the lower level work in the Grade 4 job than to divide and re-route work and set-up and maintain a separate section for this simplified recruiting and training. It was determined that Grade 4 Examiners

could very easily identify Grade 5 elements of their cases, which they were not trained to handle. Analysis also showed that a considerable amount of routine clerical and low-level administrative work was being done by Examiners.

Action: The jobs were re-designed so that all cases went to Grade 4 Examiners. If they could handle the case completely, they did so. If not, they completed the parts at their level and passed the cases on to Grade 5 Examiners. Those Examiners quickly reviewed the work already done as they familiarized themselves with the case, then completed the examinations and adjudications.

A few clerical-administrative positions were also established, thus freeing Examiners for full-time technical work.

Personnel technicians developed or selected and used tests to identify ability and aptitude of applicants for the three jobs as designed. The training program was overhauled to meet the new set-up.

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Results: The first good result was that when the new set-up was described to the Examiners still remaining in St. Louis, many liked the organization and procedure so much that they changed their minds and decided to move. Specialized recruiting campaigns, particularly in smaller cities near Indianapolis brought in sufficient recruits at the level needed. Try out of the new system showed that fewer Grade 5 Examiners were needed than under the old. After six months, an increased work load was being carried, with no loss in quality, by 40 fewer employees than before the change.

Letterkenny Ordnance Depot, Chambersburg, Pa., Transport Vehicles Branch, April, 1950

Problem: The mission of the Transport Vehicles Branch was to repair and overhaul $\frac{1}{2}$ -ton trucks and $\frac{3}{4}$ -ton trucks (ammunition carriers). Increase in production was required when the schedule of reconditioned vehicles was stepped up to meet needs of the Military Assistance program. Additional journeyman automotive mechanics (general) were needed. They were not available in the local employment area. There was no housing for mechanics that might be imported; local wage rates were not attractive enough to draw mechanics from urban areas.

Facts Bearing on the Problem: Quality standards for the repaired vehicles were raised simultaneously with output requirements. New standards of quality were "equal to or better than new." Vehicles supplied through this source for political reason had to look *completely new* as well as be in perfect condition. Rebuilt engines could be procured from another Branch of the Depot on an exchange basis.

A main difficulty lay in the fact that a *bay method* of overhaul was in use, which required crews of generally skilled mechanics to work around trucks being overhauled. Space was available for an assembly line set-up. Unmounted, portable hoists were available. The parts section had difficulty in securing adequate estimates, and there was frequent slow-down because needed parts were not forthcoming.

Just prior to the receipt of in-

September Anniversaries

Military Police Corps 26 September 1941

crease in work orders, the Branch was employing approximately 140 mechanics divided about equally between (1) Grade 12 and 15 journeymen and (2) Grade 5 and 8 helpers. Generally only one helper was assigned to each journeyman. The journeyman was under supervision of a Mechanic-Foreman or a Supervisor, who spot-checked his work.

The personnel office made further studies of the labor market and found that mechanic helpers and trainees were available.

Analysis: Consideration was given to change-over to an assembly-line method. This was not favored by the workmen. They liked the bay method. The management feared an undue breakdown in work flow while a switch-over was in process and needed equipment was being fabricated. No assembly line methods and processes had been worked out by the production engineers.

Decision was made to transfer some mechanics from other branches, and step up the tempo, *continuing to use the bay method*. Five vehicles were completely overhauled and 8 were in various stages of overhaul when sufficient data were available to indicate that time and dollar costs under this arrangement were excessive, and that schedules could not be met. Costs exceeded estimates on which funds were allocated by 92%. Too much time was wasted in moving parts, crews, and their equipment from bay to bay. Decision was made to rearrange the jobs and the whole system so that more unskilled mechanics could be used effectively. This called for conversion to an assembly line.

Action: Since no delay could be permitted, all elements of management that could contribute were called on to cooperate simultaneously on the project. The production planning staff took the initiative, working closely with the Branch Chief, the Shop Foreman, and first-line supervisors. The personnel staff continued to collect employment data, went to work on new job sheets and specifications,

and started recruiting mechanic helpers. The Supply Branch took over improving and streamlining the parts supply. The executive office, and particularly the Commanding Officer himself, kept in personal contact with the operation.

As the plans went forward, production work continued by the bay method. Workmen were kept informed of what was going on and why. Many offices and persons worked jointly on it. The project took on characteristics of a real team project.

The whole repair operation was broken down into 12 phases identified as sections. These were disassembly, sandblast, bodies and fenders, instruments and wiring, chassis assembly, etc. These 12 sections were subdivided into an average of 10 work stations such as: Rear axles, front axles, brakes, etc., in the Chassis Assembly Section.

The jobs, as designed, called for about two helpers to each journeyman, but both journeymen and helpers were assigned to specialized work at only one work station.

Results: As the new layout and methods were used, and as training progressed, the borrowed mechanics were returned to their former work. After shakedown, the line was manned with about 50 journeymen and 80 helpers. This was 10 helpers more than used in the bay method and 30 journeymen less than used. Average time for overhaul of the 8 vehicles by the bay method was 353 man hours at an overall dollar cost of more than \$1,000 each. After changeover, the average cost of the first lot of 300 was 149 man hours. Overall dollar cost, \$447 each.

Other necessary modifications related to change of production methods and job engineering: Jobs and tasks had to be delineated more specifically than formerly, standard operating procedure more precisely defined; man and job had to be matched more carefully; top training had to be more specific and direct; supervision required more coordination of work and attention to timing; morale had to be watched, and monotony avoided; supply of parts had to function perfectly; and inspection had to be tightened down.

SUMMARY

Although job engineering studies undertaken by the Department of the Army were principally for the purpose of improving the utilization of manpower, many related benefits have resulted in most instances. For example, about the same approach in job engineering is taken when jobs are redesigned as employment decreases and work programs are curtailed as when there are manpower shortages. To illustrate, after fighting was terminated in Korea, and employment was decreased in logistical activities, jobs that had been broken down into more specialized skills had to be reconstituted into more general assignments that could be handled by small, core groups. The same systematic analysis of the factors have resulted into job designs that permit maximum utilization of the limited numbers of employees available in curtailed organizations. Many improvements in use of space, machines, and materials have resulted from job engineering studies. Streamlined, less expensive organizations sometimes result.

Thus, job engineering appears to be taking its place among the other modern techniques of management that assures continued progress toward more economical and effective administration of the public business.

The USS RANDALL (AP A-224) will play a feature role in the forthcoming Universal-International movie, "Away All Boats." Location filming was done in the Caribbean last month while the RANDALL was participating in a training exercise.

The frigate UNITED STATES was launched 10 July 1797 at Philadelphia.

The original PRINCETON was the first Navy ship with boilers designed to burn anthracite coal.

Mare Island Naval Shipyard is the oldest naval station on the Pacific Coast. It was established 16 September 1854.



Special Equipment Problems are our specialty

Since the beginning of World War I, Gar Wood has produced thousands of specialized equipment items for *all* branches of the armed forces, and for *all* types of military applications.

Similarly, this company has served many thousands of civilian users, both at home and overseas. In fact, today Gar Wood is recognized as the world's largest manufacturer of hydraulic hoists, dump bodies, winches, and cranes — in addition to being a leading supplier of excavators, ditchers, spreaders and other types of construction machinery.

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Our engineers will be glad to work with you on design problems. Five great plants are ready to produce pilot models of special equipment for military testing. We invite your specifications.

GW-M-2



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World's Largest Producer of Truck Equipment

Management Mission

(Continued from page 5)

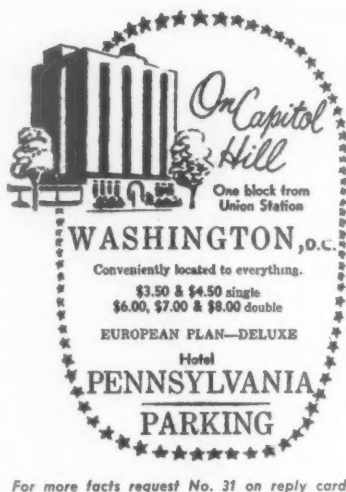
gram is characterized by a systematic surveillance of management processes, organized courses in management for supervisory personnel, management publications, a civilian awards program, emphasis upon soliciting and encouraging management improvement suggestions from all levels of the command, and a tough and relentless attitude toward those who contribute to waste and duplication.

These internal management improvement efforts, despite their recognized importance and the emphasis we place upon them, are secondary to APGC's primary mission—our third and most important management story.

The Air Proving Ground Command is unique among military organizations in that the results of its primary mission are the basis for major management decisions in virtually every field of Air Force activities throughout the world. And here "management" may not be narrowly defined. Emphasis is upon the increased effectiveness of combat units in the Air Force's front line commands. The monetary pay-off may be in the billions but in the event of war the ultimate pay-off could be national survival. In peace time or at war the degree of economy in utilizing a major portion of the nation's manpower, materiel and industrial resources depends upon how well we do our job.

A real understanding of the importance of this command to good Air Force management requires an understanding of our mission, and of the resources available for its accomplishment.

The Air Proving Ground Command has been assigned the task of determining the operational suitability of aircraft, materiel and equipment used or proposed for use by the Air Force. Obviously, this cryptic mission statement is not very revealing but it has led to the establishment of a \$200,000,000 test organization manned by some 13,000 military and civilian personnel with headquarters on the main base of a 465,000 acre military reservation. The Eglin Air Force



Base complex includes 10 auxiliary landing fields, scores of instrumented land and water ranges for evaluating the effectiveness of all types of aerial firepower and one of the most modern and complete Air Defense control centers in the world. Annual operating expenses are approximately \$65,000,000.

Here at Eglin you will see at any given time a complete Air Force in miniature. Our ramps and hangers are filled with the latest fighters, bombers, reconnaissance and cargo aircraft, many of which are yet to be assigned to operational units. They represent, as far as aircraft alone are concerned, the present and future combat potential of the Air Force's three major fighting organizations, the Tactical, Strategic and Air Defense commands.

In our laboratories undergoing operational suitability tests are components of major weapons systems and various support items and equipment.

The term "operational suitability testing" is not new, but as mentioned earlier the centralization of this proof-by-test function within one major command is a relatively new concept; a concept which we feel has saved the taxpayer millions of dollars and has prevented the uneconomical use of much larger sums. In addition, we have realized a saving in skilled manpower and vital resources which are invaluable in terms of national security.

The importance of operational suitability testing to good Air Force management requires a definition of terms and a further understand-

ing of the benefits to be derived from the centralization of all such activities.

"Operational Suitability Tests" are tests of tactically equipped aircraft materiel or equipment with their component systems and support items to determine their effectiveness in combat. These tests include not only a tactical evaluation but recommendations for Air Force standardization. They are designed to develop under simulated and actual combat and climatic conditions improved operational tactics and techniques. They also develop and refine support and training requirements.

It is in these latter areas that our mission is most directly identified with management. The command is not unique in that it tests things, for there are other military organizations within the Department of Defense that perform a similar job. Nor is the testing function itself readily identified with management. What makes the command unique is that here and at Air Force Headquarters the test function has been interpreted as including evaluations and recommendations pertinent to the far reaching ramifications of introducing a new aircraft or item of equipment into our combat forces. These evaluations and recommendations provide the Air Staff with some of their most important management tools.

Let's take as an example the operational suitability testing of the North American F-100 "Super Sabre," currently the hottest fighter in the Air Force inventory. This widely publicized supersonic fighter, armed with four rapid-firing 20 millimetre cannons and capable of straight-and-level speeds in excess of Mach 1 at altitudes well above 50,000 feet came to the Air Proving Ground Command for tests about a year ago.

The first aircraft was assigned immediately to our Climatic Projects Laboratory for tests under various weather and temperature conditions. These tests were accomplished in our huge Climatic Hangar, a combination oven and refrigerator where temperatures can be lowered to minus 65 degrees or raised to 165 degrees Fahrenheit. There it remained for more than two months while the engine, guns,

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control systems, instruments, electronic equipment and other components were tested through the entire temperature range. Concurrently, we were performing accelerated flight tests on other F-100's. At the same time we were determining what maintenance headaches, if any, were involved; whether or not the aircraft was supportable by the equipment intended to sustain it in service. We wanted to know if it could be operated and maintained by the personnel of the units to whom it would be assigned and whether or not it could be supported logistically during sustained combat operations. We asked ourselves about ground servicing problems, the effect on organizational structures, air and ground crew training and the rate of spare parts consumption.

The F-100 is a hot airplane. It takes off, climbs, cruises and lands faster than any operational fighter we have. Consequently, it needs a good long runway if it is to be operated safely. That meant determining the number of installations upon which the aircraft could be satisfactorily based. Would new runway construction have to be programmed or could we make

use of marginal installations by erecting nylon and anchor chain barriers at the end of the landing runways? These and hundreds of other questions had to be answered before we could come up with the one really big answer—the ultimate goal of all our operational suitability tests: What effect will the integration of this aircraft into existing units have upon the combat effectiveness of the United States Air Force?

In the case of the F-100 we found that none of the many problems inherent to introducing a new item of equipment were insoluble and that the aircraft itself would contribute significantly to increased aerial combat capabilities.

This is not always the case, however. In more than one instance we have found after several months of exhausting evaluation and data reduction that an aircraft which on the surface appears to be superior to an existing type would actually decrease rather than increase the combat capability of the Air Force. Performance alone is never the sole criteria.

For example, suppose we had an aircraft that proved to be superior in climb, speed, maneuverability

and firepower to existing types. Naturally our first thoughts would be to recommend that it be ordered into full scale production. But as is often the case, first thoughts are deceiving. Just how much better than existing types is this new aircraft? If the difference is slight, and current operational aircraft are considerably better than enemy aircraft of the same type, it might be more economical to hold off on quantity production or to cancel production plans entirely. This is particularly true if there is a suitable replacement aircraft under development which promises an even greater improvement in performance.

Another thing we must consider is the reliability of this new bird. It may be the greatest thing in the air when it is functioning properly but maintenance difficulties could turn it into a "hanger queen." We know that the introduction of any new weapons system temporarily reduces the combat effectiveness of the using units and it is not unusual to find that an apparently superior piece of equipment would become obsolete before our combat forces had been trained to use it with maximum effectiveness.

What about its producibility? Occasionally we find that the "bread board" or hand-made model has excellent performance characteristics but its manufacture is not adaptable to the mass production techniques of the aviation industry. The lead time for modern combat aircraft is already a matter of serious concern to the Air Force and to further increase it by delayed production schedules is highly undesirable.

All this leads up to what is probably the greatest management problem facing the Air Force today. With the increased reliance being placed upon air power, one of the most important and difficult decisions to make within the Air Force is the decision to introduce a new weapon or supporting system into our combat forces on a scale that commits a substantial proportion of our economic and production resources.

We simply can't afford to make mistakes. In this supersonic age the average cost of the latest combat aircraft is in excess of a million



APGC IS ACTUALLY A COMPLETE AIR FORCE IN MINIATURE. Typical of the variety and types of aircraft based at Eglin Air Force Base for operational suitability testing by APGC is this static display in front of the Medium and Heavy Bombardment Hanger. At left from bottom to top is the KC-97 Aerial Refueling Tanker, the B-57 Light Bomber and the giant B-36. At the right from bottom to top is the B-50 and the B-45 used as flying test beds, the six-engine B-47 and the AF's first all-jet heavy bomber, the eight-engine Boeing B-52. Grouped in the center are various types of Air Force jet fighters and two helicopters.

dollars each. The man-hours to build them and the vital strategic materials consumed in their manufacture have increased enormously since World War II. To order a large quantity of an unsuitable combat plane could do more damage to the Air Force's wartime potential and to our national security than would an enemy attack which completely destroyed a combat wing.

The Air Proving Ground Command is here to guard against such mistakes and to assure that only the best among many good potential aircraft, weapons and items of supporting equipment are placed in the hands of our personnel.

If we perform our mission properly, USAF Headquarters will be able to make procurement decisions knowing that the ultimate advantages of this new item to the combat readiness of the Air Force will far outweigh the temporary detrimental effect of integration. They can be confident of its tactical superiority over existing types and its functional reliability. Their decision will be based upon certain knowledge of the best tactics and techniques for its employment, the amount of training required to maintain and operate it and the probable impact its introduction will have upon our logistics organization. We feel that this is the essence of good management as far as air power is concerned.

Today the Air Force is under steadily mounting pressure to wring the greatest possible amount of firepower from our existing resources. We are expanding toward 137 combat wings by 1957 and these wings must be manned and supported without a comparable increase in personnel strength, facilities or dollars. Therefore, we must, in our own best interests as well as those of the taxpayer, ruthlessly eliminate those personnel and activities which are not absolutely essential to our combat effectiveness. The savings in men and money must go to man and support this increased number of combat units and all our fighting organizations must be equipped with the finest aerial weapons our Nation is able to produce. We are giving more than mere lip service to the ideal of good management for we realize

that the only acceptable management improvements are those that pay off ultimately in an increased ability to destroy the enemy in combat, if need be and to provide a National Defense second to none.

AIR FORCE STUDIES EFFECT OF JET ENGINE NOISE

The Air Force's first study of the effects of jet engine noise on Air Force base personnel and the residents of nearby communities, will be conducted at Hill AFB early this year, according to Brig. Gen. M. E. Tillery, Commander of the Ogden Air Materiel Area.

"We are rapidly approaching," said Gen. Tillery, "Our goal of an all-jet Air Force. In fact, the last propeller driven combat plane has

already been delivered into Air Force hands. All future combat planes contracted for will use jet power plants. As these planes become more widely used, the jet engine noise problem becomes more acute."

The study will be made to (1) provide information on the characteristics of jet engine noise generated by Hill AFB ground and flight operations, (2) form a basis for specific noise control measures that should be instituted by the base to solve immediate noise problems and insure that long-range planning will provide for effective noise control in future operations, and (3) provide a pool of information for use of Air Force officials in Washington in studying the control of jet noise and vibrations.

Electronics Speeding Business Operations

NEW YORK.—An army officer was leaving a defense plant here when he halted to say to a companion:

"The phone inside is ringing with a call from Washington. I'll be right with you."

The officer left his companion, dashed back to a desk inside and took the call.

Telepathy? Not at all.

Attached inside the army man's jacket was a tiny transistor radio receiver, about the size of a pack of cigarettes and weighing a little less than three and one-half ounces.

When the Washington call came in, the switchboard operator at the plant spoke into a compact sending set by her side, and the officer heard the message as he was heading out the front door. His companion walking alongside him heard nothing.

This sort of "private paging" is typical of the many electronic gadgets being adopted these days to speed operations both by the military and throughout the economy generally.

By this fall, for example, the Pennsylvania turnpike will have finished installing electronic devices to tally tolls on trucks as they pull up to the road's collection booths. This automatic audit system would count the number of axles on a vehicle and weigh it almost instantly.

In Des Moines, Iowa, a supermarket has a conveyor belt running from its checkout counter underground to a small building alongside the market's park-lot exit. Customers can pick up their orders on their way out of the lot without having to lug them from the store to their autos.

In Chicago, persons who telephone a local shopping service hear a recorded message listing eight "specials" on sale at local stores.

In Waterbury, Conn., a bank has expanded automation to its drive-in banking operation. An electronically controlled turntable outside the teller windows starts revolving when a car drives onto it. It takes five seconds for the auto-borne customer to arrive at the window, while a flashing stop signal halts oncoming cars.

The turntable moves around when the banking transaction is finished, points the car toward the exit gate and is ready for the next customer as soon as the last one drives off.



Letters to the Editor

Ordnance Division
Hq USAREUR, APO 403, NYC

Dear Editor:

As I was reading my copy of the July issue of ARMED FORCES MANAGEMENT, I encountered Mr. Daniel L. Kurshan's article on Administration versus Management Engineering. I found this article to be, not only intensely interesting, but directly related to an effort which we in USAREUR Ordnance are making to get our Management Engineers into the proper relationship with our administrators. I am certain that if I could reprint this article and disseminate it throughout the command, our efforts would be materially benefited. I therefore request your permission to do so. Incidentally, may I say that I consider the few dollars which I have invested in my subscription to your ARMED FORCES MANAGEMENT to be well spent.

C. M. McKeen, Jr.,
Major, Ord. Corps

Editor's Note:

Thank you, Major McKeen, for your comments, and you have our permission to reprint Mr. Kurshan's article.

Hq Fort Carson, Colorado
30 July 1955

Dear Editor:

We certainly enjoyed the feature by Lt. Col. Milton C. Devolites from the Office of the Surgeon General, on "Improving Medical Records." The system described will certainly save a lot of doctors' time and make for better records at the same time. It gave us some ideas.

Major James R. Cope,

Management Division
Office of the Comptroller
Department of the Army
Washington 25, D. C.
8 August 1955

Dear Editor:

Your August 1955 issue of

ARMED FORCES MANAGEMENT under "Letters to the Editor," carried a couple of items on Work Simplification.

For your information, during FY 1954 there were 500 Army installations carrying on Work Simplification training with 25,197 supervisors receiving the 12 hour course. This resulted in 13,439 installed improvements and over \$14,000,000 in over-all benefits during FY 1954. This was an 11 to 1 return on the investment.

Basic materials for the course can be obtained through regular Army supply channels by ordering SR 11-110-2, DA pamphlets DA 20-300 and DA 20-301 and GTA 20-100.

It should be noted that Work Simplification is a regular Army program carried on by Army personnel with a minimum of outside consultant service. Some outside firms charge many thousands of dollars to train one person. Multiply this by 25,000 and you will see the Army saves many millions of dollars by conducting its own Work Simplification program.

Respectfully,
Leon Burnham,

Army Management Improvement
and Work Simplification Co-
ordinator,
Management Division, OCA
Pentagon,
Washington 25, D. C.

Editor's Note: In addition to this letter Mr. Burnham inclosed a very fine article for use on ARMED FORCES MANAGEMENT entitled "Management Improvement in the Army Through Real Work Simplification." We will bring this feature to you in an early issue.

Headquarters
500th Air Defense Group
Greater Pittsburgh Airport
Coraopolis, Pennsylvania

Dear Editor:

In your August 1955 issue there was an article by Joseph Borberly, Lt. Colonel, United States Army

Reserve. The article was extremely interesting, but even more interesting to me was the fact my last contact with the writer was when we were both undergoing basic infantry training in November, 1940.

Inasmuch as there was no reference to Colonel Borberly's present address in the magazine, I would appreciate it exceedingly if you would forward same to me that I may renew our acquaintance.

Thank you for your trouble. Please accept my congratulations on your fine magazine and every wish for its continued success.

Yours truly,

Paul N. Wentz, Lt. Col.,
USAF Commander

Editor's Note: You may contact Colonel Borberly in care of The Training Department, Inland Steel Company, East Chicago, Indiana.

Lordstown Ordnance Depot
Warren, Ohio

Dear Editor:

In your issue of July, 1955, you published an article, "Administration vs. Management Engineering," by Daniel L. Kurshan. You are to be complimented for your astuteness as an editor in publishing this article.

Mr. Kurshan displays a keen insight and a very intimate knowledge in his analytical discussion of Administration vs. Management Engineering, both essential broad fields but with characteristics that do not compliment each other.

I have one general observation to offer with regard to the comment that "the smaller the unit the more likelihood that administration and management engineering are accomplished by the same head and the same set of hands." It is, perhaps, saying the same thing in different terms, but I prefer to use an economic yardstick, i.e., the relatively high cost of management engineering must justify itself from an economic standpoint in the over-all operation of the plant or activity. I do not mean to resort to such devices as the management engineering people will submit a minimum of two improvement projects a month, or anything of that sort, but they must in the long run be a source of credit rather than a debit to the organization.

One other comment with regard to the personality conflicts. These conflicts, and they do occur, are carried on up to the head of the management engineer function and to the chief of the operation concerned. The level of the conflict is then between two members of the top management team. It becomes a matter of resolution or solution by the chief of the top management team. This compels personal action by the works manager, or in the case of a military installation, the Commanding Officer.

The above comments are intended to be constructive and in no manner or means to detract from the extreme value of your editorial. It is the best piece of writing on this subject that I have read, and I recommend Mr. Kurshan's analysis and his observations as required reading on the part of all individuals engaged in the administration or management of an activity.

Very truly yours,
Keith T. O'Keefe, Colonel,
Ord. Corps, Commanding

Going Back

(Continued from page 11)

ondary" techniques for developing executives? Why use them for their intended purpose, the imparting of information useful for executives, but don't fall into the error of confusing knowledge with executive ability. The industrial mathematician, Steinmetz, for example, had knowledge and was handsomely paid for it, but he was not an executive. He accomplished his objectives by his own efforts, and remember that, by definition, an executive is one who gets things done through others. The distinction between knowledge and executive ability is the quality of leadership, the distinction between knowing all the answers and being able to pick and manage men who do.

As Confucius or someone else said, knowledge is power. Certainly we want our military executives to have all of it the taxpayer can afford; but it is worthy of note that the institutions of higher learning in the Department of Defense, such as the War College, do not attach certificates of promotion to their

diplomas. Promotion depends not upon knowledge but upon leadership ability. McClellan had a higher I.Q. than Grant but you know what happened to him. Actually, the finest executive the North had during the War Between the States was the very one with the least detailed knowledge of military science. But his career substantiated the definition of an executive as one who gets things done through others. He was Grant's commander-in-chief; he controlled the Navy as well, although the only vessel he had ever been on was a Mississippi river steamboat; and in what little spare time those responsibilities left him, he signed documents in his capacity as President. You remember him, a self-educated lawyer with a profound insight into human nature and how to make it "tick"—Abraham Lincoln.

Start your executive development program with an organization chart. For each position on it, write a functional job description. Then by whatever appraisal system best fits your needs, evaluate the present incumbent of each position as to his competence in his *present assignment*.

Foiled you, eh? You thought that executive development was concerned only with preparing men for promotion, men in the category of potential replacements for higher positions. What! Ignore today's executives and develop only those of tomorrow? What kind of business policy is that, even though we saw earlier that it is often a case of too little too late?

Next, convert the evaluations of the present executives with respect to their present jobs into a color code. Traffic light colors are the most convenient: dark green (safe) for excellent; light green (safe again) for satisfactory and can be improved; yellow (caution) satisfactory but can't be improved; orange (much caution) unsatisfactory but can be improved; and red (danger) plain unsatisfactory.

Paint each rectangle on the organization chart with whichever color describes its present incumbent. Then do something about the reds, oranges, yellows and light greens. And for Pete's sake, don't aggravate the ulcers of your board

of directors by showing them the chart.

The next step is to find at least one potential replacement, but preferably two—competition is the spice of life—inside your organization for each rectangle on the chart, appraise them and print their names under the rectangle in the appropriate color, which in this instance indicates degree of readiness to assume the job's responsibilities. Now give these fair-haired lads whatever dosage of *planned experience* they require to develop their replacement status into a soothing dark green.

Do you clearly visualize the two equally important objectives of executive development: a highly qualified incumbent in each position and at least one well prepared replacement for it? Fortunate is the man who is highly qualified in his present job and thoroughly developed for a higher one; the psychologists are searching for such freaks to analyze in connection with the abstract qualities of an executive.

An incidental benefit of a review of the organization chart and job descriptions is the discovery of weaknesses in the organization, such as divided responsibility, overlapping authority or even functions for which no one has been assigned responsibility—as, for instance, executive development!

The question of where to place the rectangle of responsibility for executive development on the organization chart is important; while the location of the rectangle varies with different companies, remember that the man whose name is printed in it is the custodian and controller of your No. 1 business asset, the composite executive ability of your organization.

Concluded next month

A successful manager was asked what helped him reach the top. "One thing stands out," he said. "I could think out loud with my superiors. I could throw out crazy suggestions. I could talk over any subject without fear that I would be squelched. It had more effect on my development as a manager than anything else."

—Harvard Business Review

PRODUCTS

designed to deflate production Costs

As a service to OPERATING DEPARTMENTS and PURCHASING OFFICERS, ARMED FORCES MANAGEMENT will provide you with a selected list of manufacturers' products.

A Products Information Library has been established and descriptive literature, catalogues, and reference material is available to you without cost or obligation. The firms have been carefully selected, have a high standing in their respective line, and deserve consideration. They are NOT, in each case, advertisers in ARMED FORCES MANAGEMENT, but each offers you a service or product which we feel will be helpful in your operation. Operating and Purchasing departments are respectfully urged to take advantage of this service.

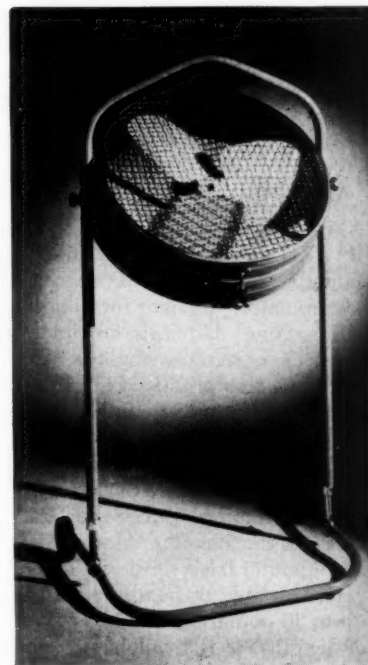
How to Use Armed Forces Management's Library—

Inserted in this issue, a postage free card is provided for your convenience in requesting descriptive and informative literature. This will be forwarded to you, without obligation. Many cost saving ideas are generated by Operating Departments that have referenced information on products available. Purchasing Officials will find this type of information invaluable. All that need be done is: fill in name and address, circle that which will assist you, and drop in the mail.

rail type conveyors, long standard as a means of moving materials through a production process, are gaining prominence as a means for storage of materials in the unused space overhead. Tons of materials can now be stored in what has heretofore been wasted space. Flex-I-Line Conveyor Corporation has developed a new type of overhead cable conveyor with a unique one piece trolley bracket connected by cable segments. Use of cable has reduced the first cost, and maintenance costs have been reduced due to the simplified method of locking the cable terminals in the trolley brackets and the reduction of moving parts. Due to the flexibility, sharp turns in both vertical and horizontal planes are possible. The complete line of Flex-I-Line conveyors, ranging from light duty to the heaviest, is described in a four page bulletin available to interested organizations.

For more facts request No. 3 on reply card

PRECISION EQUIPMENT COMPANY (See Cut). Production has started on a new and unique electric fan, named Roll-About be-

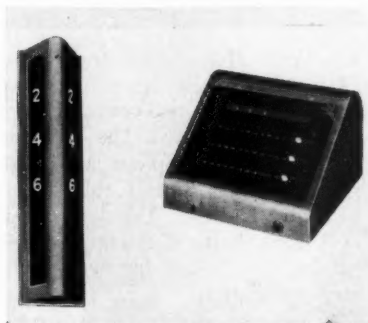


cause it moves easily from one location to another on extra heavy duty rubber wheels. Roll-About's giant 20", deep pitched propeller moves free air at 3950 cubic feet per min-

ALL-STATE WELDING ALLOYS COMPANY. The increasing popularity among welders and welding departments of low-fuming bronze rods for maintenance and production brazing, has caused this well-known supplier to redesign and rebuild his flux-coating equipment to handle rods in 36-inch lengths. Flux-Coated Low-Fuming Bronze rods at popular prices are now available in 36" lengths. They come in 10-pound packages packed in 60-pound cartons. Core sizes are 3/32", 1/8", 3/16" and 1/4". Stocks are available at All-State Distributors.

For more facts request No. 1 on reply card

AUTH ELECTRIC COMPANY. (See Cut). Announce the development of a new V-shaped paging annunciator with only two illuminated surfaces that can be seen from three directions. Originally designed for doctors, it has found many additional uses in military



installations. The unit can be mounted on walls at "T" corridor intersections or may be used for a double faced ceiling annunciator. Additional equipment available includes a fire alert red bull's-eye or a special red corridor dome which can be mounted adjacent to the annunciator.

For more facts request No. 2 on reply card

FLEX-I-LINE CONVEYOR CORPORATION. Overhead mono-

THE ARMY LIBRARY

WASHINGTON, D. C.

ute and mounted and cushioned-in-rubber the 2-speed motor runs silently with no radio interference. The new fan costs just \$39.95 and performs equally well as an exhaust fan.

For more facts request No. 4 on reply card

MICRO SWITCH (Minneapolis-Honeywell). A new line of completely sealed, environment-proof limit switches has been developed by Micro Switch. Designed for use in aircraft, mobile, marine and other applications where environment conditions are severe, the new switches contain an inert gas, and this prevents their operation from being affected by atmospheric changes. Designated series "EP," these light-weight switches offer a variety of electric ratings and circuitry selections, and are available in either side-or-bottom-mounting designs.

For more facts request No. 5 on reply card

FRIEZ INSTRUMENT DIVISION (Bendix Aviation Corporation). A new aid to mariners—a complete miniature weather station set which can be held in one hand to automatically record essential weather data in total darkness and under severe weather conditions, has just been developed for the Navy. The new weather recording set weighs about six pounds and is 23" in height.

For more facts request No. 6 on reply card

AMF ATOMICS INCORPORATED (American Machine & Foundry Company). Master Slave Manipulators, devices for handling radio-active materials in nuclear research, heretofore made-to-order, are now being produced in quantity for the first time. Found to be of value in other industrial and military uses, this industrial "department store" with volume production has reduced prices drastically on these devices. The Master Slave Manipulator has a sensitive "touch", yet is capable of handling weights up to 30 pounds. Made in a variety of lengths, it is available in both left and right hand models.

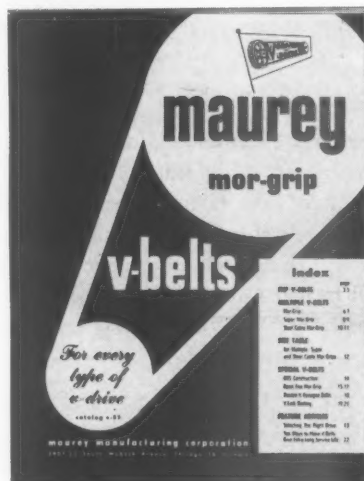
For more facts request No. 7 on reply card

PRECAST CONCRETE ROOF DECK MANUFACTURERS. A completed survey has just revealed that non-combustible precast con-

crete roof deck is being specified more and more for United States government buildings. More than 15,000,000 square feet of this roof deck, made and cured under close control, were installed on new federal government buildings over the mid-century decade ending last December. Among the prominent reasons cited by architects, engineers and government officials specifying precast concrete roof deck were fire resistance, reduced maintenance, ease of installation, reduced insurance cost and durability.

For more facts request No. 8 on reply card

MAUREY MANUFACTURING CORPORATION (See Cut). The complete line of Maurey Mor-Grip



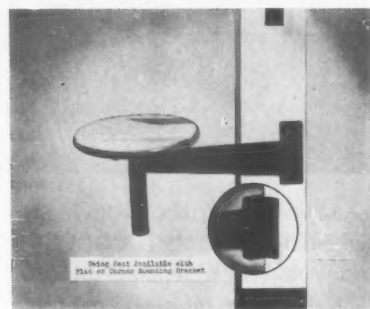
Fractional Horsepower and Heavy Duty Multiple V-Drive Belts, are described in a new 3-color, 24-page catalog just released. The Multiple line is most complete and consists of Super, Steel Cable, Open End and Hexagon V-Belts as well as V-Link Belting. A copy of this catalog is a "must" for every military installation.

For more facts request No. 9 on reply card

P M INDUSTRIES. An expansion of operations in the field of rotary electro-mechanical products has been announced through the acquisition of Instrument Motors Company. For more than twelve years, P M Industries has specialized in designing, developing and producing electro-mechanical components for major electrical, electronic, aircraft and instrument companies.

For more facts request No. 10 on reply card

THE CHICAGO HARDWARE FOUNDRY COMPANY (See Cut). A new swing-arm seat that is



readily adjustable, has recently been announced by this leading manufacturer of sectional tables and swing arm seats. The new seat has a 5" adjustment up or down, and is available for mounting either on a flat surface as shown in the larger photo or on corners, as indicated in the inset photo. Ruggedly constructed of cast iron for maximum durability and long, trouble-free service, it is obtainable in a wide variety of colors, finishes and models.

For more facts request No. 11 on reply card

MAGNETIC RESEARCH CORPORATION. The MP-85 all magnetic Pulse Generator, developed by MRC engineers, is a prototype

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ARMED FORCES MANAGEMENT

unit designed for commercial radar and use as laboratory testing equipment. It has been engineered to use saturable reactors instead of thyristors as discharge devices. The unit is basically a capacitor type pulser in which electrical energy storage is achieved by means of AC-Resonant charging. High pulse powers are obtained by rapid discharge of the condenser through saturable reactors, which are in appearance and construction similar to transformers and act as static magnetic switches.

For more facts request No. 12 on reply card

PIASECKI HELICOPTER CORPORATION. A new version of the H-21 "Work-Horse," the large, heavy-duty helicopter now in service with the U.S. Air Force, U.S. Army and Royal Canadian Air Force will be built for airline and industrial use. The new model will be known as the PH-42.

For more facts request No. 13 on reply card

MINNESOTA MINING AND MANUFACTURING COMPANY. A new copying paper, for the recently introduced all-electric "Secretary" brand copying machine, has just been announced. The new paper is heavier—18 pound stock—than the company's previous copying paper which results in easier handling, and is available in green, yellow, pink and the standard neutral shade, for organizations which use color coding filing systems. The new paper and all-electric machine are reported to be saving their complete cost in the first month's operation.

For more facts request No. 14 on reply card

WHEELABRATOR CORPORATION. A newly designed and completely automatic abrasive blasting machine has recently been announced by the Wheelabrator Corporation. In use at several Ordnance installations, savings in excess of \$100,000 per year over and above the price of the machine have been realized. Cleaning by metallic abrasive thrown centrifugally by wheels mounted inside the cabinet, without the use of compressed air, has made the new machine popular with many organizations.

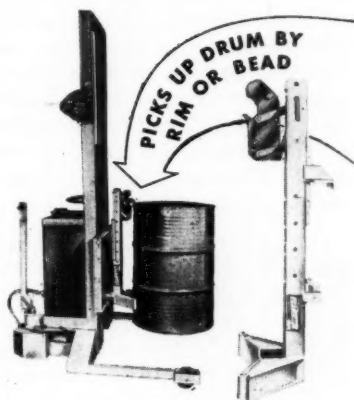
For more facts request No. 15 on reply card

ALL AMERICAN ENGINEER-

ING COMPANY. The first airplane to be equipped with a retractable hydro-lift—a leading gear that permits a landplane to operate from any surface, including water, snow, mud, ice and runways—has been successfully flown. The hydro-lift gear resembles a pair of short wide skis with wheels protruding from the center. The new gear, which can be tailored to any size airplane, has many applications and has been tested on several different type aircraft.

For more facts request No. 16 on reply card

MARVEL INDUSTRIES INCORPORATED (See Cut). An-



nounces the Liftomatic Junior, a drum handling attachment for hand propelled fork trucks and portable stackers having removable forks or platforms, of either the outrigger or counter-weighted type. An adaptation of the widely used Liftomatic Power Truck Attachment, it is made to fit any make of hand propelled truck, and can be attached or removed by one operator in sixty seconds. Capable of handling any drum, open or closed, fibre or steel, regardless of diameter or height, the Junior has a capacity rating of 1000 pounds. It is completely automatic or mechanical, pick-up and release being effected through raising or lowering the truck carriage.

For more facts request No. 17 on reply card

VIC MANUFACTURING COMPANY. This long established manufacturer of water coolers, solvent coolers, heat exchangers, have introduced a new water saver and temperature regulating valve which sells for only \$30. For years temperature control has been a costly

and time-consuming problem. This maintenance-free valve can be installed in minutes on any line or processing equipment. Applicable to hundreds of military and industrial uses, complete information is available to interested installations.

For more facts request No. 18 on reply card

CRENLO INCORPORATED. This national manufacturer of industrial and automotive supplies have recently announced the Crenlo Model 1105 AM Winterized Enclosure and Tailored Cabs for Caterpillar, John Deere, International Harvester tractors, Allis-Chalmers four wheel prime movers and a Whiting trackmobile. These well-made cab enclosures provide year-round comfort for operators and are well within the price limitations of all activities.

For more facts request No. 19 on reply card

MASTER TANK AND WELDING. Production is in full-swing on a new line of round SAFER fuel tanks for trucks, which feature an exclusive offset weld development for greater safety and crash resistance. SAFER fuel tanks feature an overlapping head which places the weld a full inch from the point where the head of the tank starts to curve. This exclusive development means that under any blow the metal of the tank will fold instead of shearing. The round tanks are available singly or in pairs and come in 35, 40, 45, 50, 60 and 65 gallon capacities.

For more facts request No. 20 on reply card

LESTER B. KNIGHT & ASSOCIATES, INC. Experienced management Counsel and specialized services to Armed Forces Management is offered by Knight engineers. If your operation will benefit by highly specialized skills in financial management, paperwork management, management controls, or plant engineering, a Knight representative will call upon your inquiry.

For more facts request No. 21 on reply card

EQUIPTO DIVISION OF AURORA EQUIPMENT COMPANY—Manufacturers of factory and shop equipment for the past forty years, Equipto will send their free, illustrated catalogue, covering

a wide variety of products, to interested Defense personnel.

For more facts request No. 22 on reply card

GRAPHIC SYSTEMS. This New York firm invites men interested in efficient management to get things done with their Boardmaster Visual control which gives a graphic picture of your operations, spotlighted in color, preventing errors, saving time and money.

For more facts request No. 23 on reply card

THE GEORGE W. BORG CORPORATION, Borg Equipment Division. This firm offers 48 models of potentiometers including their well-known 900 and 1100 series micropots, all models with a precision reputation for accuracy, dependability, and long life. Complete information is carried in catalog number BED-A15B.

For more facts request No. 24 on reply card

LITHIUM CORPORATION OF AMERICA, INC. Lithium, key chemical in the future of our nation's defense is used for propellants, new high temperature alloys, cermets, and chemical processes to mention just a few.

For more facts request No. 25 on reply card

CLARK EQUIPMENT COMPANY. Clark invites you to drive one of their Powrworkers and see. Manueverable, powerful, accessible, its performance features will save money, outperform any competitive machine on the market. A 16-page Powrworker booklet is available on request with full details, cut-away views, bonus features, the entire Powrworker story.

For more facts request No. 26 on reply card

GAR WOOD INDUSTRIES, INC. The world's largest producer of truck equipment makes special equipment problems their specialty. The company has produced thousands of specialized equipment items for all branches of the Armed Forces and for all types of military applications.

For more facts request No. 27 on reply card

CURTISS-WRIGHT CORP. Curtiss-Wright's propeller division supplies its turboelectric propellers for the major U.S. turboprop engines. The propellers feature full synchronization, full feathering by either manual or automatic means, fast reversing, and single-lever power control.

For more facts request No. 28 on reply card

Brown-Forman

(Continued from page 7)

our executives rather than a narrow specialist attitude. It is no exaggeration to say that within the broad limits imposed by their own personality and experience, all of our executives at policy-making levels are sales-minded, research-minded, production-minded or what have you. It seems to me that this is a most valuable characteristic of a business organization of any size, particularly one undergoing rapid growth. Our committee structure has also helped us achieve a thoroughly integrated operation. Our top executives are in close touch with all important problems and decisions and can guide activities under their direction accordingly. This is not to say that the ever-present human element does not occasionally cause wires to cross or not quite meet!

The advantages of the committee approach show up more strikingly in the work of our Marketing Committee. Here are brought together the company's top management, our top sales executives in the field and their assistants, as well as home office department heads whose work is directly concerned with the various phases of marketing. In these meetings, the regional managers who direct the company's sales operations within their territories have an opportunity to get management thinking at first hand. They also take a very real part themselves in shaping company policy on all matters affecting sales. The reverse is also true, because management itself benefits greatly from the give-and-take of these meetings in getting the field's point of view on policy and plans affecting sales.

Our experience with these meetings has more than satisfied us that they result in making the company's marketing procedure a true reflection of company thinking. It results in a frank, open exchange, in which each speaks his mind openly and honestly, and in which there is no domination by any individual or any part of the executive group. We fashion an approach to our activity in the market which directly represents the company

and unifies the various creative and administrative functions that go to make up marketing into a true team operation.

As I have suggested, our emphasis on giving committees the lead in setting our management course makes certain adjustments necessary. But these also have their beneficial side. Admittedly, committee work requires considerable time. However, our top committees meet according to a master schedule which helps to prevent conflict or an over-burdening at one period. But in the final analysis, this time is not wasted. These meetings help to resolve matters that could conceivably take far greater time and energy in the absence of the decisions hammered out. We are convinced, too, that the company in the end gains by compelling top executives to absent themselves from their desks and turn over the day's details to assistants. We are conscious of the great importance of capable second line executives in any scheme of organization and feel that the added responsibilities they carry in our type of management greatly help their growth.

It may be argued that these meetings tend to discourage creativity and originality. It is true that the display of individual imagination or ingenuity is subjected to group scrutiny, but the record testifies that this fine screening of ideas has not lessened their quality or quantity. If I may refer to it without immodesty, Brown-Forman has a reputation in its own industry as an innovator and trail-breaker. In addition, the clash of minds stimulates rather than inhibits ideas.

Nor has the primary place that committees hold in our management put any brake on action. The nature of committee agenda usually does not need hasty or urgent action. The nature of committee agenda usually does not need hasty or urgent action. Call meetings provide for group action when unanticipated problems arise. By keeping the road cleared so far as major decisions are concerned, the effect of committee action generally is to aid rather than hamper the work of our department heads. It should also be pointed out here that none of our executives is totally relieved of the need for individual decisions.

In every case, he retains a broad field for action on his own. Emergencies tend to be handled expeditiously and effectively.

The committee also has an important part at lower management levels. A number of such committees are concerned with various forms of company activity. Their membership is comprised for the most part of second and third level management. They function with regard to such subjects as employee communications, personnel, insurance, and the like. With the assent of the officer or department head in charge of the particular activity, who is generally a member of the committee, it is empowered to make a wide range of decisions. Many of these committees also develop concrete recommendations on many subjects involving policy, which are submitted to one or another of the top management committees which I have already mentioned. These operating committees are extremely useful as a training ground for junior management. They help our younger executives to learn to think and work together, to express thoughts effectively and persuasively, to carry their part in the various assignments that grow out of committee work. We regard all this as part of executive development.

Committee activity is only the formal expression of the teamwork which is so much a part of our Brown-Forman way of doing things. Staff meetings, usually weekly, are conducted by practically all department heads. Some of these meetings are confined to assistants or supervisors with management status. In others, some or all of the office force, including secretaries, are also included in the conference and have an opportunity to perceive and contribute to the broader picture of which they are a part.

One of the most interesting in this class of group activities is the monthly meeting of our plant supervisory personnel, which is generally chaired by our Manager of Industrial Relations. These informal meetings bring together the fairly large group of people from our plants who supervise the various phases of production. A high proportion of this branch of the Brown-Forman family are long-term com-

pany employees, who, for the most part, have risen from the ranks on the strength of ability and experience. They have a deep interest, not only in the activity of their own departments, but in the progress of the company as a whole. We make an attempt to satisfy that interest by giving these men an opportunity to keep in touch with developments elsewhere in the company's physical operation and to talk freely about their own work and problems. One of the regular features of these meetings are talks by executives from the Sales, Advertising, Public Relations and other departments. We are convinced that these meetings are of great value in keeping vitally alive throughout our working force a consciousness of the importance to every individual worker of the progress and prosperity of his company.

Personnel relations is under the general direction of a vice-president, but administration is divided among three personnel directors. One of these is the Director of Sales Personnel and Sales Development who combines personnel duties with his other responsibilities. Our Director of Industrial Relations is also in effect director of plant personnel. The executive in charge of office personnel carries the title of Personnel Director.

Specialization of this kind is generally not reached until a company is considerably larger than Brown-Forman is at present. But we have found that it pays. The three categories of personnel each present quite different characteristics and problems. By concentrating effort in one category alone, each of these executives acquires a closer understanding of his group than would probably be possible if his activity were more widely diffused.

Last year our company undertook intensive research, conducted by an outside professional organization, into every aspect of our communications with our employees. The survey itself, made up largely of individual and mass interviews, provided valuable guidance on this important phase of personnel relations. We are still engaged in translating its results into a revised communications pattern. A great number of changes

have already been put into effect. Among these are a complete revamping of our house publication, and establishment of a permanent Committee on Employee Communications, comprised of our personnel directors, the Director of Public and Trade Relations and one of his assistants. A requirement has also been set up under which that Department, which keeps thoroughly abreast of changing company policy, clears all communications to employees of more than intra-departmental scope.

This survey represented an expenditure of money and a diversion of staff time and effort at which many companies might with good reason hesitate. For us, however, it was completely compatible with the important position which employee relations holds in our own scheme of things.

Brown-Forman is probably untypical of organizations of comparable size in the breadth of responsibility and authority vested in its regional sales executives. As previously pointed out, our regional sales managers have a considerable voice in shaping company policy with respect to every phase of the marketing of our products. They have wide discretion in the selection and assignment of field personnel, a task in which they are aided by an organized program administered by the sales training department, including the services of a nationally-recognized personnel testing organization. They not only take a very definite part in the shaping of our national advertising program, but, within budgetary limits, pretty much determine the advertising and merchandising programs for their own regions.

Brown-Forman's rapid growth in recent years has not made us complacent, although we naturally take considerable satisfaction in the fact that within the past 10 years our sales have increased from \$33,558,808 in 1945 to \$73,570,139 in 1954. But it has caused us to turn an increasingly self-critical and appraising eye on our management "techniques," a word which once had little or no significance to the small company we were at one time.

In coming to grips with the realities of modern-day industry and the

increasing complexity of our own organization, we have tried earnestly to retain the virtues and strengths of that small company. We particularly want to keep among us a spirit which encourages a feeling on the part of the individual that he is a *participant* in the company and not merely a cog performing an isolated operation. At least partially because of this spirit, the company benefits at the same time from teamwork on the part of the group and initiative on the part of the individual. It is the individual in the final analysis who makes the company, and who, because he feels that he is *not* just a cog, is likely to devote more than the average degree of interest and energy to his job.

TRADES MANAGEMENT BOARD ESTABLISHED

The establishment of a Trades Management Board for Wage Board employees at the Corps of Engineers' Research and Development Laboratories, Fort Belvoir, Virginia, has been announced by Col. H. F. Sykes, Jr., Commanding Officer.

Described by the colonel as a realistic approach to improving the management and operation of the laboratories, the new board will provide management training for middle grade Wage Board personnel by making possible their participation in the formulation of Labs' policy, procedures and overall management practices. It will be composed of 13 members selected from grades WB-12 through WBS-11.

Recommendation for the formation of the Trades Board was made by the Laboratories' Junior Management Board which affords middle grade "white collar" workers similar opportunities in management training.

Both boards have resulted from the extensive management improvement program being conducted at the Engineer Laboratories under the direction of Jack H. Epstein, Fort Belvoir training officer.

Approximately 2,850 male and 525 female medical officers donned uniforms in 1954.

Index to Advertisers

- George W. Borg Corporation.....Page 1**
The makers of 48 models of potentiometers display their precision reputation of accuracy, dependability, and long life.
- Clark Equipment Company.....Page 17**
Clark invites you to try one of their maneuverable, powerful, accessible Powrworkers and see how to economize on plants operations.
- Curtiss-Wright Corporation.....Page 25**
Curtiss-Wright's propeller division relates statistics about its turboelectric propellers manufactured for major U.S. turboprop engines.
- Douglas Aviation.....Cover Two**
One of the nation's leading aircraft manufacturers invites men to find a career in the Air Force.
- Equipto Division of Aurora Equipment Company.....Page 31**
Manufacturers of factory and shop equipment for the past forty years, Equipto will send their free, illustrated catalogue, covering a wide variety of products, to interested personnel of the Defense Establishment.
- Gar Wood Industries, Inc.....Page 33**
The world's largest producer of truck equipment makes special equipment problems their specialty, invites your inquiry.
- Graphic Systems.....Page 15**
Men interested in efficient management are invited to write this New York firm for information on its Boardmaster Visual control board to save time and money and prevent errors.
- Lester B. Knight and Associates, Inc.....Page 11**
Experienced management counsel and specialized services to the Armed Forces Management groups are available from this firm with an outstanding record of achievement in its field.
- Lithium Corporation of America, Inc.....Page 2**
Lithium, one of the key chemicals in our nation's defense is used for propellants, high temperature alloys, cermets, and chemical processes to mention just a few.
- Lockheed Aircraft Corporation.....Page 4**
Lockheed's Georgia division displays its turboprop USAF Hercules, its mobile troop transport capable of loading 64 fully equipped paratroops four abreast through the rear door ramp.
- Hotel Pennsylvania.....Page 34**
On Capitol Hill in Washington, D. C., just one block from Union Station is this first class hotel with reasonable rates, guest auto parking.
- Railroads of the United States.....Cover 3**
Armed Forces Personnel and impediments are moved safely and economically each day by the Railroads of the United States. Approved travel facilities, together with rate reductions for military travel.
- Republic Aviation.....Cover 4**
This firm's F-84F Thunderstreaks strengthen more than ever the power and versatility of the Strategic Air Command.



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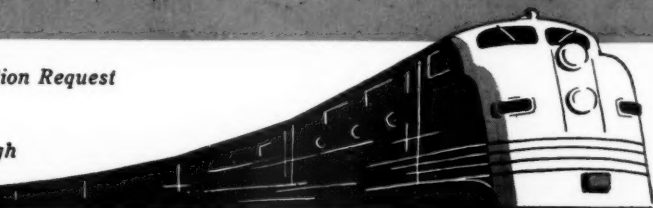
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... we welcome you!

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For more facts request No. 29 on reply card

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TOMORROW'S PROMISE

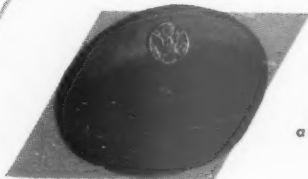


For nearly a generation such great fighter planes as REPUBLIC's Thunderbolt and Thunderjet have written their own imperishable records of combat superiority.

Today . . . two rugged, powerful members of this warrior clan, the F-84F Thunderstreak and the RF-84F Thunderflash, are on active service adding to the versatility of our U. S. Air Force. > These swept-wing newcomers emphasize the sleek silhouette which has long been the pride mark of Thundercraft. > The potential of the F-103

and F-105 stresses that never in a long, proud history have the touch of engineering genius and production experience been so skillfully combined. > On drawing boards and in the experimental stage are other almost unbelievable new concepts of advance in aeronautical sciences.

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